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This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

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TITLE OF THE INVENTION (500 characters max)

CRYSTAL STRUCTURE OF HUMAN ALPHA-GALACTOSIDASE

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CRYSTAL STRUCTURE OF HUMAN α-GALACTOSIDASE

Field of the Invention

This invention relates to the X-ray crystal structure of the human α-galactosidase glycoprotein. More specifically, the invention relates to crystallized compositions of human α-galactosidase and to crystallized complexes of human α-galactosidase and its catalytic product α-galactose. The invention further relates to a computer programmed with the structure coordinates of the human α-galactosidase's active site wherein said computer is capable of displaying a three-dimensional representation of that active site. The invention also relates to methods for rational drug design based on the structural data for human α-galactosidase provided on computer readable media, as analyzed on a computer system having suitable computer algorithms.

Background of the Invention

The lysosomal enzyme α-galactosidase (α-GAL or α-Gal A, E.C. 3.2.1.22, SEQ ID NO:2) catalyzes the removal of galactose from oligosaccharides, glycoproteins, and glycolipids during the catabolism of macromolecules (FIG. 5a). Deficiencies in lysosomal enzymes lead to the accumulation of substrates in the tissues, conditions known as lysosomal storage diseases. In humans, the absence of functional α-GAL leads to the accumulation of galactosylated substrates (primarily globotriaosylceramide, FIG. 5b) in the tissues, leading to Fabry disease, an X-linked recessive disorder first described in 1898 (Fabry, J. *Arch. Dermatol. Syph.* , 1898, 43:187) characterized by chronic pain, ocular opacities, liver and kidney impairment, skin lesions, vascular deterioration and/or cardiac deficiencies (Brady, R. O., et al., *N. Engl. J. Med.* , 1967, 276:1163-7; Desnick, R. J., et al., In *The Metabolic and Molecular Bases of Inherited Disease* 8th edit. -Scriver, C. R., Beaudet, A. L., Sly, W. S. & Valle, D., eds.-, 2001, pp. 3733-3774. McGraw-Hill, New York). Recombinant human α-GAL has the ability to restore enzyme function in patients (Schiffmann, R., et al., *JAMA* , 2001, 285:2743-9; Eng, C. M., et al., *N. Engl. J. Med.*, 2001, 345:9-16), and enzyme replacement therapy using α-GAL was recently approved in the United States as a treatment for Fabry disease. α-GAL became the second recombinant protein approved for the treatment of a lysosomal storage disorder (after β-glucosidase, a treatment for Gaucher disease -

Beutler, E. & Grabowski, G. A., 2001, Gaucher Disease. In *The Metabolic and Molecular Bases of Inherited Disease* 8th edit. -Scriver, C. R., Beaudet, A. L., Sly, W. S. & Valle, D., eds.-McGraw-Hill, New York), and α-GAL represents one of a small number of recombinant human proteins approved for the treatment of any disease. A second treatment for Fabry disease (specific for the cardiac variant of the disease) uses galactose infusion, which presumably helps stabilize the mutant α-GAL protein (Frustaci, A., et al., *N. Engl. J. Med.*, 2001, 345:25-32). In addition to enzyme replacement therapy and galactose infusion, gene replacement therapy using the α-GAL gene shows potential as a treatment for Fabry disease (Park, J., et al., *Proc Natl Acad Sci U S A*, 2003, 100:3450-4).

There are currently two recombinant glycoprotein products, REPLAGAL™ (Transkaryotic Therapies, Inc., Cambridge, MA) and FABRAZYME™ (Genzyme, Inc., Cambridge, MA), available for enzyme replacement therapy used in the treatment of Fabry disease (Schiffmann, R., et al., *JAMA* , 2001, 285:2743-9; Eng, C. M., et al., *N. Engl. J. Med.*, 2001, 345:9-16). These two glycoproteins have identical amino acid sequences but are produced in different cell lines, resulting in different glycosylation at the N-linked carbohydrate attachment sites. REPLAGAL™ is produced in a genetically engineered human cell line, while FABRAZYME™ is produced in a Chinese hamster ovary (CHO) cell line. REPLAGAL™ contains a greater amount of complex carbohydrate while Fabrazyme contains a higher fraction of sialylated and phosphorylated carbohydrate (Lee, K., et al., *Glycobiology*, 2003, 13:305-13). Because the polypeptide sequence of the two glycoproteins is identical, these differences in carbohydrate composition are solely responsible for the differences in tissue distribution and dose response of the two enzyme replacement therapies.

α-GAL has also attracted attention for its ability to convert human blood group antigens. Recombinant α-GAL has been used to convert blood of type B into blood of type O, the universal donor type (Zhu, A., et al., *Arch. Biochem. Biophys.*, 1996, 327:324-9), a process currently in clinical trials.

Because of its utility in the treatment of Fabry disease and as a reagent for converting human blood types, much effort has been put into the expression and purification of large amounts of human α-GAL. The endogenous enzyme has been purified from human placenta (Mayes, J. S. & Beutler, E., *Biochim Biophys Acta*, 1977, 484:408-16), liver cells (Dean, K. J. & Sweeley, C. C., *J Biol Chem*, 1979, 254:9994-10000), spleen cells and plasma (Bishop, D. F. & Desnick, R. J., *J Biol Chem*, 1981, 256:1307-16), and fibroblasts (Lemansky, P., et al., *J Biol Chem*, 1987, 262:2062-5); recombinant enzyme has been produced in *E. coli* bacterial

cells (Hantzopoulos, P. A. & Calhoun, D. H., *Gene,* 1987, 57:159-69), COS monkey cells (Tsuji, S., et al., *Eur J Biochem,* 1987, 165:275-80), CHO cells (Ioannou, Y. A., et al., *J Cell Biol,* 1992, 119:1137-50), baculovirus-infected Sf9 insect cells (Coppola, G., et al., *Gene,* 1994, 144:197-203; Chen, Y., et al., *Protein Expr Purif,* 2000, 20:228-36), *Pichia pastoris* yeast cells (Chen, Y., et al., *Protein Expr Purif,* 2000, 20:472-84), transduced human bone marrow cells (Takenaka, T., et al., *Exp Hematol* 1999, 27:1149-59), and continuously cultured genetically engineered human fibroblasts (Schiffmann, R., et al., *JAMA* , 2001, 285:2743-9). Despite the ability to successfully express and purify human α-GAL since 1977, the three-dimensional structure has not been solved, although a crystallization report appeared in 1994 (Murali, R., et al., *J. Mol. Biol.* 239:578-80). Structural analysis has been hindered by the heterogeneous carbohydrates on the glycoprotein, which comprise 5-15% of the mass of the secreted material and contain over 70 different species built upon 23 different core structures (Matsuura, F., et al., *Glycobiology* 1998, 8:329-39).

Thus, there is a great need to solve the crystal structure of α-GAL and, in particular, to delineate the active site of the enzyme. With this information, computer models of this active/binding site can be created and potential agonists and antagonists of α-GAL can be rationally designed.

Summary of the Invention

This invention provides the crystal structure of human α-GAL. The crystal structure has been solved by X-ray crystallography to a resolution of 3.25 Å. Based upon the crystal structure we have characterized human α-GAL in detail and identified the key amino acid residues that make up the active/binding site of the enzyme. These coordinates are useful in methods for designing agonists and antagonists of the enzyme, which in turn may be useful in treating Fabry and other diseases.

The invention also provides the X-ray structure coordinates of a complex comprising α-GAL and its catalytic product, α-galactose.

In another aspect the invention provides a computer programmed with the coordinates of the human α-GAL active/binding site, and with a program capable of converting those coordinates into a three-dimensional representation of the active site on a display connected to the computer.

In a further aspect, the invention provides a computer which, when programmed with at least a portion of the structural coordinates of human α-GAL and an X-ray diffraction data

set of a different molecule or molecular complex, performs a Fourier transform of these structural coordinates of the human α-GAL coordinates and then processes the X-ray diffraction data into structure coordinates of the different molecule or molecular complex via the process of molecular replacement.

These and other objects of the invention will be described in further detail in connection with the detailed description of the invention.

Brief Description of the Sequences

SEQ ID NO:1 is the nucleotide sequence of the human α-GAL cDNA.

SEQ ID NO:2 is the predicted amino acid sequence of the translation product of human α-GAL cDNA (SEQ ID NO:1).

Brief Description of the Drawings

FIG. 1 (pp. 1-82) lists the atomic structure coordinates for human α-GAL as derived by X-ray diffraction from a crystal of human α-GAL dimer. The following abbreviations are used in FIG. 1: "Atom type" refers to the element whose coordinates are measured. The first letter in the column defines the element.

"X, Y, Z" crystallographically define the atomic position of the element measured.

"OCC" is an occupancy factor that refers to the fraction of the molecules in which each atom occupies the position specified by the coordinates. A value of "1" indicates that each atom has the same conformation, i.e., the same position, in all molecules of the crystal.

"B" is a thermal factor that measures movement of the atom around its atomic center.

FIG. 2 shows a diagram of a computer used to generate a three-dimensional graphical representation of a molecule or molecular complex according to this invention.

FIG. 3 shows a cross section of a magnetic storage medium.

FIG. 4 shows a cross section of an optically-readable data storage medium.

FIG. 5 is a schematic showing the reaction catalyzed by α-GAL; FIG. 5(a) the general reaction of α-GAL; FIG. 5 (b) α-GAL and Fabry disease.

FIG. 6 depicts a stereo ribbon diagram of the overall fold of: (a) the α-GAL monomer; (b) and (c) the α-GAL dimer (two views); (d) the surface of α-GAL.

FIG. 7 is a phylogeny tree depicting the evolutionary relationships in the α-GAL/α-NAGAL family.

FIG. 8 depicts electron density maps showing the active site of human α-GAL from (a) native and (b) galactose-soaked crystals; FIG. 8 (c) shows the superimposed active sites of human α-GAL (green), and chicken α-NAGAL (yellow).

FIG. 9 depicts the N-linked carbohydrate attached to N192 of human α-GAL is shown with helix α4. Electron density from a σ_A-weighted simulated annealing composite omit map (grey) is contoured at 1.1σ. Five sugar residues have been built into the electron density at this site.

FIG. 10 is a schematic representation of the human α-GAL active site with a galactose molecule.

Detailed Description of the Invention

As mentioned above, we have solved the three-dimensional X-ray crystal structure of human α-galactosidase. The atomic coordinate data is presented in FIG. 1.

In order to use the structure coordinates generated for the human α-galactosidase, its active site or portions or homologues thereof, it is often times necessary to convert them into a three-dimensional shape. This is achieved through the use of commercially available software that is capable of generating three-dimensional graphical representations of molecules or portions thereof from a set of structure coordinates.

An "active site", also referred to as "binding site" elsewhere herein, is of significant utility in fields such as drug discovery. The association of natural ligands or substrates with the active site(s) (or "binding pocket") of their corresponding receptors or enzymes is the basis of many biological mechanisms of action. Similarly, many drugs exert their biological effects through association with the binding pockets of receptors and enzymes. Such associations may occur with all or any parts of the binding pocket. An understanding of such associations will help lead to the design of drugs having more favorable associations with their target receptor or enzyme, and thus, improved biological effects. Therefore, this information is valuable in designing potential agonists and antagonists of the binding sites of biologically important targets.

The term "active site" (or "binding pocket"), as used herein, refers to a specific region of an enzyme, that, as a result of its shape, favorably associates with its substrate and catalysis occurs.

We have identified at least one active site per monomer in human α-GAL, which is a good target for designing agonists and/or antagonists and/or inhibitors.

The terms "α-GAL-like binding pocket", as used herein, refers to a portion of a molecule or molecular complex whose shape is sufficiently similar to the human α-GAL binding pocket, so as to bind common ligands. These commonalties of shape are defined by a root mean square deviation from the structure coordinates of the backbone atoms of the amino acids that make up these binding pockets in the human α-GAL structure (as set forth in FIG. 1) of not more than 1.5 Å. The method of performing this calculation is described below.

The x-ray structure reveals human α-GAL as a homodimeric glycoprotein with each monomer composed of two domains, a $(\beta/\alpha)_8$ domain containing the active site and a C-terminal domain containing eight antiparallel β strands on two sheets in a β sandwich (FIG. 6a). After removal of the 31 residue signal sequence, the first domain extends from residues 32 to 330 and contains the active site formed by the C-terminal ends of the β strands at the center of barrel, a typical location for the active site in $(\beta/\alpha)_8$ domains. The second domain, comprised of residues 331 to 429, packs against the first with an extensive interface, burying 2500 $Å^2$ of surface area within one monomer. The dimer has overall protein dimensions of approximately 75 x 75 x 50Å (FIG. 6b). The molecule is concave in the third dimension and varies in thickness from approximately 20 to 50Å (FIG. 6c). Electron density is visible for 390 and 391 amino acid residues (out of 398 total) in the two copies of the monomer in the crystallographic asymmetric unit; the missing residues occur at the C-terminus. The two monomers pack with an interface that extends the 75Å width of the dimer and buries 2200 $Å^2$ of surface area. In the dimer interface, 30 residues from each monomer contribute to the interface, from loops β1-α1, β6-α6, β7-α7, β8-α8, β11-β12, and β15-β16. The dimer is markedly negatively charged, as seen in a surface electrostatic potential (FIG. 6d). With 47 carboxylate groups and only 36 basic residues in the 398 residues in the molecule, the overall charge per monomer is expected to be −11 at neutral pH. The carboxylates are most concentrated around the active site, but in the low pH of the lysosome, many of these groups become protonated, reducing the charge on the molecule. In addition to the negative charges on the protein, the N-linked carbohydrate is highly phosphorylated and sialylated (Lee, K., et al., *Glycobiology*, 2003, 13:305-13) (see below), further increasing its negative electrostatic potential. The N-linked carbohydrates fall distal to the active sites (FIG. 6d). Each monomer contains the three N-linked carbohydrate sites, five disulfide bonds (C52-C94, C56-C63, C142-C172, C202-C223, and C378-C382), two unpaired cysteines (C90 and C174), and three *cis* prolines (P210, P380, and P389).

As mentioned above, the C-terminal seven and eight residues of each chain have no electron density associated with them and are presumably disordered. This disorder is consistent with the observation of slight heterogeneity in the C-terminus of recombinant human α-GAL, where the truncation of one or two residues from the C-terminus can occur but has no effect upon the activity of the enzyme (Lee, K., et al., *Glycobiology,* 2003, 13:305-13). The structure offers no support for the observation that the removal of 2 to 10 residues from the C-terminus increases the activity of α-GAL (Miyamura, N., et al., *J Clin Invest,* 1996, 98:1809-17), because the final residue seen in the structure falls at least 45Å from each active site and on the opposite face of the molecule.

In both the native and galactose-soaked crystal structures, electron density appears in the two crystallographically-independent active sites (FIGS. 8a and b). In the galactose-soaked crystal, this density represents α-galactose, the normal catalytic product of the enzyme (K_i ~1mM). In the native structure, this density most likely derives from the cryoprotectant ethylene glycol, a weak inhibitor of glycoside hydrolases (Tsitsanou, K. E., et al., *Protein Sci,* 1999, 8:741-9), analogous to the insertion of glycerol into carbohydrate binding sites on proteins (Garman, S. C., et al., *Structure,* 2002, 10:425-434; Tsitsanou, K. E., et al., *Protein Sci,* 1999, 8:741-9; Schmidt, A., et al., *Protein Sci,* 1998, 7:2081-8). The two active sites of the dimer are separated by approximately 50 Å. As the enzyme shows little change between the liganded and unliganded structures, there is no evidence for cooperativity between the two sites, although the biochemical evidence is mixed (Dean, K. J. & Sweeley, C. C., *J Biol Chem,* 1979, 254:9994-10000; Bishop, D. F. & Desnick, R. J., *J Biol Chem,* 1981, 256:1307-16).

We have determined that human α-GAL binds α-galactose by making specific contacts to each functional group on the monosaccharide. Residues from seven loops in domain 1 form the *active site*: β1-α1, β2-α2, β3-α3, β4-α4, β5-α5, β6-α6, and β7-α7. The active site is formed by the side chains of residues W47, D92, D93, Y134, C142, K168, D170, E203, L206, Y207, R227, D231, D266, and M267. Thus, a binding pocket defined by the structural coordinates of these amino acids, as set forth in FIG. 1; or a binding pocket whose root mean square deviation from the structure coordinates of the backbone atoms of these amino acids is not more than 1.5 Å is considered a human α-GAL-like binding pocket of this invention. In important embodiments, C172 makes a disulfide bond to C142.

In the α-GAL/α-NAGAL family, specificity for the 2 position on the galactose ligand occurs via the β5-α5 loop. This was called the "N-acetyl recognition loop" in α-NAGAL

(Garman, S. C., et al., *Structure*, 2002, 10:425-434); in the overall α-GAL/α-NAGAL family "2 position recognition loop" or "2 loop" is appropriate. This loop falls near the boundary of exons 4 and 5 of animal α-GAL/α-NAGAL, which have a small insertion in this region, resulting in a short helical stretch at the top of the β5 strand; this insertion is absent in other species. Plant and fungal α-GALs use a Cys and a Trp on this loop to coordinate the 2-hydroxyl on galactose; animal α-GAL uses a Glu and a Leu to recognize the 2-hydroxyl (FIG. 7, green) while animal α-NAGAL uses a Ser and an Ala to recognize an N-acetyl at the 2 position (FIG. 7, yellow). In the animal enzymes, the larger Glu and Leu side chains sterically block the larger N-acetyl substituent, while the smaller Ser and Ala side chains nicely accommodate an N-acetyl group and tolerate a hydroxyl group.

With three different conformations in the 2 loop now identified, the substrate specificity of the other members of the family can be categorized by homology. For example, genome sequencing of *Drosophila melanogaster* and *Anopheles gambiae* have each identified pairs of genes in the α-GAL family. By examination of the sequences in the 2 loop, two are clearly α-NAGALs while the other two appear to be α-GALs (FIG. 7, yellow and purple). Surprisingly, *Aspergillus niger* contains an enzyme identified as α-GAL that, although only 30% identical to the animal protein sequences, contains a 2 loop virtually identical to animal α-NAGALs (FIG. 7, yellow). We predict this enzyme is primarily an α-NAGAL with partial α-GAL activity, much like human α-NAGAL, which was originally thought to be an α-GAL based upon similar activity (Dean, K. J., et al., *Biochem. Biophys. Res. Commun.*, 1977, 77:1411-7; Schram, A. W., et al., *Biochim. Biophys. Acta*, 1977, 482:138-44).

Although human α-GAL makes contacts to each functional group on the α-galactose ligand, the enzyme shows little specificity for the distal portion of the substrate beyond the glycosidic linkage, and the active site cleft is found in a broad opening on the concave surface of the enzyme (FIG. 6c). The lack of substrate specificity of human α-GAL beyond the terminal α-galactose differs slightly from the specificity of other α-GALs, which act only upon substrates containing terminal α1-6 galactose groups (Kim,W.D., et al., *Phytochemistry*, 2002, 61:621-30). This increased specificity of plant α-GALs may derive from their monomeric structure, as residues buried in the dimer interface of animal α-GALs (*e.g.*, those on the β1-α1 loop - Fujimoto, Z., et al., *J Biol Chem*, 2003, 278:20313-8) are available for ligand recognition in monomeric α-GALs.

Both α-GALs and α-NAGALs are α retaining exoglycosidases, where both the substrate and product of the catalytic reactions are α anomers at the 1 position on the galactose ring. This retention of anomeric configuration is accomplished by a double displacement catalytic mechanism where the anomeric carbon undergoes two successive nucleophilic attacks (Vasella, A., et al., *Curr Opin Chem Biol,* 2002, 6:619-29). The two sequential inversions of the anomeric carbon lead to retention of the configuration at the end of the catalytic cycle. In two α-GALs from different species, peptic digestion of covalently trapped intermediates has identified the specific aspartic acid acting as the catalytic nucleophile (Hart, D. O., et al., *Biochemistry,* 2000, 39:9826-36; Ly, H. D., et al., *Carbohydr. Res.,* 2000, 329:539-47). These data, combined with the high resolution structure of chicken α-NAGAL, predict the catalytic mechanism of human α-GAL. In human α-GAL, the first nucleophilic attack upon the substrate comes from D170, cleaving the glycosidic linkage and leading to a covalent enzyme-intermediate complex. In the second step of the reaction, a water molecule (deprotonated by D231) attacks C1 of the covalent intermediate, liberating the second half of the catalytic product and regenerating the enzyme in its initial state. Human α-GAL operates most efficiently at low pH, consistent with its highly acidic composition and its lysosomal location.

Retaining glycosidases typically have distances of 5–6Å between catalytic carboxylates, while inverting glycosidases typically have distances of 9–11Å between these residues (McCarter, J. D. & Withers, S. G., *Curr. Opin. Struct. Biol.* 1994, 4:885-92). From these distances, it has been possible to reliably predict the mechanism and function of a glycosidase given its structure. However, this rule must be reconsidered in light of the new structures in the α-GAL/α-NAGAL family: for the known structures in the family, the closest approach of the two catalytic carboxylates is 6.5-7Å, among the largest distances seen for retaining glycosidases.

It will be readily apparent to those of skill in the art that the numbering of amino acids in other isoforms of human α-GAL may be different than that set forth for herein. Corresponding amino acids in other isoforms of human α-GAL are easily identified by visual inspection of the amino acid sequences or by using commercially available homology software programs. Each of those amino acids of human α-GAL is defined by a set of structure coordinates set forth in FIG. 1. The term "structure coordinates" refers to Cartesian coordinates derived from mathematical equations related to the patterns obtained on diffraction of a monochromatic beam of X-rays by the atoms (scattering centers) of a protein

or protein-ligand complex in crystal form. The diffraction data are used to calculate an electron density map of the repeating unit of the crystal. The electron density maps are then used to establish the positions of the individual atoms of the enzyme or enzyme complex.

Those of skill in the art understand that a set of structure coordinates for an enzyme or an enzyme-complex or a portion thereof, is a relative set of points that define a shape in three dimensions. Thus, it is possible that an entirely different set of coordinates could define a similar or identical shape. Moreover, slight variations in the individual coordinates will have little effect on overall shape. In terms of binding pockets, these variations would not be expected to significantly alter the nature of ligands that could associate with those pockets.

The term "associating with" refers to a condition of proximity between a chemical entity or compound, or portions thereof, and a binding pocket or binding site on a protein. The association may be non-covalent--wherein the juxtaposition is energetically favored by hydrogen bonding or van der Waals or electrostatic interactions--or it may be covalent.

The variations in coordinates discussed above may be generated because of mathematical manipulations of the human α-GAL structure coordinates. For example, the structure coordinates set forth in FIG. 1 could be manipulated by crystallographic permutations of the structure coordinates, fractionalization of the structure coordinates, integer additions or subtractions to sets of the structure coordinates, inversion of the structure coordinates or any combination of the above.

Alternatively, modifications in the crystal structure due to mutations, additions, substitutions, and/or deletions of amino acids, or other changes in any of the components that make up the crystal could also account for variations in structure coordinates. If such variations are within an acceptable standard error as compared to the original coordinates, the resulting three-dimensional shape is considered to be the same. Thus, for example, a ligand (e.g., substrate) that bound to the α-GAL active site would also be expected to bind to another binding pocket whose structure coordinates defined a shape that fell within the acceptable error.

Various computational analyses are therefore necessary to determine whether a molecule or the binding pocket portion thereof is sufficiently similar to the α-GAL active/binding site described above. Such analyses may be carried out in well known software applications, such as the Molecular Similarity application of Quanta™ (Molecular Simulations Inc., San Diego, CA.) version 4.1, and as described in the accompanying User's Guide.

The Molecular Similarity application permits comparisons between different structures, different conformations of the same structure, and different parts of the same structure. The procedure used in Molecular Similarity to compare structures is divided into four steps: 1) load the structures to be compared; 2) define the atom equivalences in these structures; 3) perform a fitting operation; and 4) analyze the results.

Each structure is identified by a name. One structure is identified as the target (i.e., the fixed structure); all remaining structures are working structures (i.e., moving structures). Since atom equivalency within Quanta™ is defined by user input, for the purpose of this invention we will define equivalent atoms as protein backbone atoms (N, Cα, C and O) for all conserved residues between the two structures being compared. We also consider only rigid fitting operations.

When a rigid fitting method is used, the working structure is translated and rotated to obtain an optimum fit with the target structure. The fitting operation uses an algorithm that computes the optimum translation and rotation to be applied to the moving structure, such that the root mean square difference of the fit over the specified pairs of equivalent atom is an absolute minimum. This number, given in angstroms (Å), is reported by Quanta™.

For the purpose of this invention, any molecule or molecular complex or binding pocket thereof that has a root mean square deviation of conserved residue backbone atoms (N, Cα, C and O) of less than 1.5 Å when superimposed on the relevant backbone atoms described by structure coordinates listed in FIG. 1 are considered identical. More preferably, the root mean square deviation is less than 1.0 Å.

The term "root mean square deviation" means the square root of the arithmetic mean of the squares of the deviations from the mean. It is a way to express the deviation or variation from a trend or object. For purposes of this invention, the "root mean square deviation" defines the variation in the backbone of a protein from the backbone of human α-GAL or a binding pocket portion thereof, as defined by the structure coordinates of human α-GAL described herein.

Therefore, according to one aspect of the invention a computer is provided for producing:

(a) a three-dimensional representation of a molecule or molecular complex, wherein said molecule or molecular complex comprises a binding pocket defined by structure coordinates of human α-galactosidase amino acids W47, D92, D93, Y134, C142, K168, D170, E203, L206, Y207, R227, D231, D266, and M267, according to FIG. 1; or

b) a three-dimensional representation of a homologue of said molecule or molecular complex, wherein said homologue comprises a binding pocket that has a root mean square deviation from the backbone atoms of said amino acids of not more than 1.5 Å, wherein said computer comprises:

(i) a machine-readable data storage medium comprising a data storage material encoded with machine-readable data, wherein said data comprises the structure coordinates of human α-galactosidase amino acids W47, D92, D93, Y134, C142, K168, D170, E203, L206, Y207, R227, D231, D266, and M267, according to FIG. 1;

(ii) a working memory for storing instructions for processing said machine-readable data;

(iii) a central-processing unit coupled to said working memory and to said machine-readable data storage medium for processing said machine readable data into said three-dimensional representation; and

(iv) a display coupled to said central-processing unit for displaying said three-dimensional representation.

In an important embodiment, C172 makes a disulfide bond to C142.

According to another aspect of the invention, a computer for producing a three-dimensional representation of a molecule or molecular complex defined by structure coordinates of all of the human α-GAL amino acids set forth in FIG. 1, or a three-dimensional representation of a homologue of said molecule or molecular complex, is provided. The homologue comprises a binding pocket that has a root mean square deviation from the backbone atoms of said amino acids of not more than 1.5 Å. In this aspect of the invention, a machine readable data contains the coordinates of all of human α-GAL.

According to a further aspect, the invention provides a computer for determining at least a portion of the structure coordinates corresponding to X-ray diffraction data obtained from a molecule or molecular complex, wherein said computer comprises:

(a) a machine-readable data storage medium comprising a data storage material encoded with machine-readable data, wherein said data comprises at least a portion of the structural coordinates of human α-GAL according to FIG. 1;

(b) a machine-readable data storage medium comprising a data storage material encoded with machine-readable data, wherein said data comprises X-ray diffraction data from said molecule or molecular complex;

(c) a working memory for storing instructions for processing said machine-readable data of (a) and (b);

(d) a central-processing unit coupled to said working memory and to said machine-readable data storage medium of (a) and (b) for performing a Fourier transform of the machine readable data of (a) and for processing said machine readable data of (b) into structure coordinates; and

(e) a display coupled to said central-processing unit for displaying said structure coordinates of said molecule or molecular complex.

FIG. 2 demonstrates one version of the foregoing aspects. System 10 includes a computer 11 comprising a central processing unit ("CPU") 20, a working memory 22 which may be, e.g., RAM (random-access memory) or "core" memory, mass storage memory 24 (such as one or more disk drives or CD-ROM drives), one or more cathode-ray tube ("CRT") display terminals 26, one or more keyboards 28, one or more input lines 30, and one or more output lines 40, all of which are interconnected by a conventional bi-directional system bus 50.

Input hardware 36, coupled to computer 11 by input lines 30, may be implemented in a variety of ways. Machine-readable data of this invention may be inputted via the use of a modem or modems 32 connected by a telephone line or dedicated data line 34. Alternatively or additionally, the input hardware 36 may comprise CD-ROM drives or disk drives 24. In conjunction with display terminal 26, keyboard 28 may also be used as an input device.

Output hardware 46, coupled to computer 11 by output lines 40, may similarly be implemented by conventional devices. By way of example, output hardware 46 may include CRT display terminal 26 for displaying a graphical representation of a binding pocket of this invention using a program such as Quanta™ as described herein. Output hardware might also include a printer 42, so that hard copy output may be produced, or a disk drive 24, to store system output for later use.

In operation, CPU 20 coordinates the use of the various input and output devices 36, 46, coordinates data accesses from mass storage 24 and accesses to and from working memory 22, and determines the sequence of data processing steps. A number of programs may be used to process the machine-readable data of this invention. Such programs are

discussed in reference to the computational methods of drug discovery as described herein. Specific references to components of the hardware system 10 are included as appropriate throughout the following description of the data storage medium.

FIG. 3 shows a cross section of a magnetic data storage medium 100 which can be encoded with a machine-readable data that can be carried out by a system such as system 10 of FIG. 2. Medium 100 can be a conventional floppy diskette or hard disk, having a suitable substrate 101, which may be conventional, and a suitable coating 102, which may be conventional, on one or both sides, containing magnetic domains (not visible) whose polarity or orientation can be altered magnetically. Medium 100 may also have an opening (not shown) for receiving the spindle of a disk drive or other data storage device 24.

The magnetic domains of coating 102 of medium 100 are polarized or oriented so as to encode in manner which may be conventional, machine readable data such as that described herein, for execution by a system such as system 10 of FIG. 2.

FIG. 4 shows a cross section of an optically-readable data storage medium 110 which also can be encoded with such a machine-readable data, or set of instructions; which can be carried out by a system such as system 10 of FIG. 2. Medium 110 can be a conventional compact disk read only memory (CD-ROM) or a rewritable medium such as a magneto-optical disk which is optically readable and magneto-optically writable. Medium 100 preferably has a suitable substrate 111, which may be conventional, and a suitable coating 112, which may be conventional, usually of one side of substrate 111.

In the case of CD-ROM, as is well known, coating 112 is reflective and is impressed with a plurality of pits 113 to encode the machine-readable data. The arrangement of pits is read by reflecting laser light off the surface of coating 112. A protective coating 114, which preferably is substantially transparent, is provided on top of coating 112.

In the case of a magneto-optical disk, as is well known, coating 112 has no pits 113, but has a plurality of magnetic domains whose polarity or orientation can be changed magnetically when heated above a certain temperature, as by a laser (not shown). The orientation of the domains can be read by measuring the polarization of laser light reflected from coating 112. The arrangement of the domains encodes the data as described above.

Thus, in accordance with the present invention, X-ray coordinate data capable of being processed into a three dimensional graphical display of a molecule or molecular complex which comprises an α-GAL-like binding pocket is stored in a machine-readable storage medium.

The human α-GAL X-ray coordinate data, when used in conjunction with a computer programmed with software to translate those coordinates into the 3-dimensional structure of a molecule or molecular complex comprising an α-GAL-like binding pocket may be used for a variety of purposes, such as drug discovery.

For example, the structure encoded by the data may be computationally evaluated for its ability to associate with chemical entities. Chemical entities that associate with human α-GAL may inhibit that enzyme, and are potential drug candidates. Alternatively, the structure encoded by the data may be displayed in a graphical three-dimensional representation on a computer screen. This allows visual inspection of the structure, as well as visual inspection of the structure's association with chemical entities.

Thus, according to another aspect the invention relates to a method for evaluating the potential of a chemical entity to associate with:

a) a molecule or molecular complex comprising a binding pocket defined by structure coordinates of human α-galactosidase amino acids W47, D92, D93, Y134, C142, K168, D170, E203, L206, Y207, R227, D231, D266, and M267, according to FIG. 1, or

b) a homologue of said molecule or molecular complex, wherein said homologue comprises a binding pocket that has a root mean square deviation from the backbone atoms of said amino acids of not more than 1.5 Å. The method comprises the steps of:

i) employing computational means to perform a fitting operation between the chemical entity and a binding pocket of the molecule or molecular complex; and

ii) analyzing the results of said fitting operation to quantify the association between the chemical entity and the binding pocket.

The term "chemical entity," as used herein, refers to chemical compounds, complexes of at least two chemical compounds, and fragments of such compounds or complexes.

Alternatively, the structural coordinates of the human α-GAL binding pocket can be utilized in a method for identifying a potential agonist or antagonist of a molecule comprising a human α-GAL-like binding pocket. The method comprises the steps of:

a) using the atomic coordinates of human α-galactosidase amino acids W47, D92, D93, Y134, C142, K168, D170, E203, L206, Y207, R227, D231, D266, and M267, according to FIG. 1 ± a root mean square deviation from the backbone atoms of said amino acids of not more than 1.5 Å, to generate a three-dimensional structure of molecule comprising α-GAL-like binding pocket;

b) employing said three-dimensional structure to design or select said potential agonist or antagonist;

c) synthesizing said agonist or antagonist; and

d) contacting said agonist or antagonist with said molecule to determine the ability of said potential agonist or antagonist to interact with said molecule.

In important embodiments, the atomic coordinates of all the amino acids of NS3 human α-GAL according to FIG. 1 ± a root mean square deviation from the backbone atoms of said amino acids of not more than 1.5 Å, are used to generate a three-dimensional structure of molecule comprising an α-GAL-like binding pocket.

For the first time, the present invention permits the use of molecular design techniques to identify, select and design chemical entities, including agonists and antagonists, capable of binding to human α-GAL-like binding pockets. Because of the present invention, the necessary information for designing new chemical entities and compounds that may interact with human α-GAL-like binding pockets, in whole or in part, is provided.

Throughout this section, discussions about the ability of an entity to bind to, associate with or inhibit a human α-GAL-like binding pocket refers to features of the entity alone. Assays to determine if a compound binds to human α-GAL are well known in the art and are exemplified below.

The design of compounds that bind to or inhibit human α-GAL-like binding pockets according to this invention generally involves consideration of two factors. First, the entity must be capable of physically and structurally associating with parts or all of the human α-GAL -like binding pockets. Non-covalent molecular interactions important in this association include hydrogen bonding, van der Waals interactions, hydrophobic interactions and electrostatic interactions.

Second, the entity must be able to assume a conformation that allows it to associate with the human α-GAL-like binding pocket directly. Although certain portions of the entity will not directly participate in these associations, those portions of the entity may still influence the overall conformation of the molecule. This, in turn, may have a significant impact on potency. Such conformational requirements include the overall three-dimensional structure and orientation of the chemical entity in relation to all or a portion of the binding pocket, or the spacing between functional groups of an entity comprising several chemical

entities that directly interact with the human α-GAL-like binding pocket or homologues thereof.

The potential inhibitory or binding effect of a chemical entity on a human α-GAL-like binding pocket may be analyzed prior to its actual synthesis and testing by the use of computer modeling techniques. If the theoretical structure of the given entity suggests insufficient interaction and association between it and the human α-GAL-like binding pocket, testing of the entity is obviated. However, if computer modeling indicates a strong interaction, the molecule may then be synthesized and tested for its ability to bind to a human α-GAL-like binding pocket. This may be achieved by testing the ability of the molecule to inhibit human α-GAL using assays described in the art. In this manner, synthesis of inoperative compounds may be avoided.

A potential inhibitor of a human α-GAL-like binding pocket may be computationally evaluated by means of a series of steps in which chemical entities or fragments are screened and selected for their ability to associate with the human α-GAL-like binding pockets.

One skilled in the art may use one of several methods to screen chemical entities or fragments for their ability to associate with a human α-GAL-like binding pocket. This process may begin by visual inspection of, for example, a human α-GAL-like binding pocket on the computer screen based on the human α-GAL structure coordinates in FIG. 1 or other coordinates which define a similar shape generated from the machine-readable storage medium. Selected fragments or chemical entities may then be positioned in a variety of orientations, or docked, within that binding pocket as defined supra. Docking may be accomplished using software such as Quanta™ and Sybyl™, followed by energy minimization and molecular dynamics with standard molecular mechanics force fields, such as Charmm™ and Amber™.

Specialized computer programs may also assist in the process of selecting fragments or chemical entities. These include: GRID (P. J. Goodford, *J. Med. Chem.*, 1985, 28:849-857), available from Oxford University, Oxford, UK; MCSS (A. Miranker et al., *Proteins: Structure, Function and Genetics*, 1991, 11:29-34), available from Molecular Simulations, San Diego, CA; AUTODOCK (D. S. Goodsell et al., *Proteins: Structure. Function, and Genetics*, 1990, 8:195-20), available from Scripps Research Institute, La Jolla, CA; DOCK (I. D. Kuntz et al., *J. Mol. Biol.*, 1982, 161:269-288), available from University of California, San Francisco, CA.

Other suitable software that can be used to view, analyze, design, and/or model a protein, and/or protein fragments, include but are not limited to: Alchemy™, LabVision™, Sybyl™, Molcadd™, Leapfrog™, Matchmaker™, Genefold™ and Sitel™ (available from Tripos Inc., St. Louis, MO); Quanta™, Cerius2™, X-Plor™, CNS™, Catalyst™, Modeller™, ChemX™, Ludi™, Insight™, Discover™, Cameleon™ and Iditis™ (available from Accelrys Inc., Princeton N.J.); Rasmol™ (available from Glaxo Research and Development, Greenford, Middlesex, U.K.); MOE™ (available from Chemical Computing Group, Montreal, Quebec, Canada); Maestro™ (available from Shrodinger Inc.,); Midas/MidasPlus™ (available from UCSF, San Francisco, CA); VRML (webviewer--freeware on the internet); Chime (MDL--freeware on the internet); MOIL (available from University of Illinois, Urbana-Champaign, IL); MacroModel™ and GRASP™ (available from Columbia University, New York, NY); Ribbon™ (available from University of Alabama, Tuscaloosa, AL); NAOMI™ (available from Oxford University, Oxford, UK); Explorer Eyechem™ (available from Silicon Graphics Inc., Mountain View, CA); Univision™ (available from Cray Research Inc., Seattle, WA); Molscript™ and O (available from Uppsala University, Uppsala, Sweden); Chem 3D™ and Protein Expert™ (available from Cambridge Scientific, MA); Chain™ (available from Baylor College of Medicine, Houston, TX); Spartan™, MacSpartan™ and Titan™ (available from Wavefunction Inc., Irvine, CA); VMD™ (available from U. Illinois/Beckman Institute); Sculpt™ (available from Interactive Simulations, Inc., Portland, OR); Procheck™ (available from Brookhaven National Laboratory, Upton, NY); DGEOM (available from QCPE--Quantum Chemistry Program Exchange, Indiana University Bloomington, IN); RE_VIEW (available from Brunel University, London, UK); Xmol (available from Minnesota Supercomputing Center, University of Minnesota, Minneapolis, MN); Hyperchem™ (available from Hypercube, Inc., Gainesville, FL); MD Display (available from University of Washington, Seattle, WA.); PKB (available from National Center for Biotechnology Information, NIH, Bethesda, MD); Molecular Discovery Programmes (available from Molecular Discovery Limited, Mayfair, London); Growmol™ (available from Thistlesoft, Morris Township, N.J.); MICE (available from The San Diego Supercomputer Center. La Jolla, CA); Yummie and MCPro (available from Yale University, New Haven, CT); Caveat™ (P. A. Bartlett et al, In "*Molecular Recognition in Chemical and Biological Problems*", Special Pub., Royal Chem. Soc., 1989, 78:182-196; G. Lauri and P. A. Bartlett, *J. Comput. Aided Mol. Des.*, 1994, 8:51-66), available from the University of California, Berkeley, CA; 3D Database systems such as

ISIS™ (MDL Information Systems, San Leandro, CA). This area is reviewed in Y. C. Martin, "3D Database Searching in Drug Design", *J. Med. Chem.*, 1992, 35:2145-2154; Hook™ (M. B. Eisen et al, *Proteins: Struct., Funct., Genet.*, 1994, 19:199-221), available from Molecular Simulations, San Diego, CA; and upgraded versions thereof.

Once suitable chemical entities or fragments have been selected, they can be assembled into a single compound or complex. Assembly may be preceded by visual inspection of the relationship of the fragments to each other on the three-dimensional image displayed on a computer screen in relation to the structure coordinates of human α-GAL. This would be followed by manual model building using software such as Quanta™ or Sybyl™.

Instead of proceeding to build an inhibitor of human α-GAL-like binding pocket in a step-wise fashion one fragment or chemical entity at a time as described above, inhibitory or other human α-GAL binding compounds may be designed as a whole or "de novo" using either an empty binding site or optionally including some portion(s) of a known inhibitor(s).

Other molecular modeling techniques may also be employed in accordance with this invention [see, e.g., N. C. Cohen et al., *J. Med. Chem.*, 1990, 33:883-894; see also, M. A. Navia and M. A. Murcko, *Curr. Opin. in Struct. Biology*, 1992, 2:202-210; L. M. Balbes et al., "A Perspective of Modern Methods in Computer-Aided Drug Design", in *Reviews in Computational Chemistry*, Vol. 5, K. B. Lipkowitz and D. B. Boyd, Eds., VCH, New York, pp. 337-380 (1994); see also, W. C. Guida, *Curr. Opin. Struct. Biology*, 1994, 4:777-781].

Once a compound has been designed or selected by the above methods, the efficiency with which that entity may bind to an human α-GAL binding pocket may be tested and optimized by computational evaluation. For example, an effective human α-GAL binding pocket inhibitor must preferably demonstrate a relatively small difference in energy between its bound and free states (i.e., a small deformation energy of binding). Thus, the most efficient human α-GAL binding pocket inhibitors should preferably be designed with a deformation energy of binding of not greater than about 10 kcal/mole, more preferably, not greater than 7 kcal/mole. Human α-GAL binding pocket inhibitors may interact with the binding pocket in more than one conformation that is similar in overall binding energy. In those cases, the deformation energy of binding is taken to be the difference between the energy of the free entity and the average energy of the conformations observed when the inhibitor binds to the protein.

An entity designed or selected as binding to a human α-GAL binding pocket may be further computationally optimized so that in its bound state it would preferably lack repulsive electrostatic interaction with the target enzyme and with the surrounding water molecules. Such non-complementary electrostatic interactions include repulsive charge-charge, dipole--dipole and charge-dipole interactions.

Specific computer software is available in the art to evaluate compound deformation energy and electrostatic interactions. Examples of software designed for such uses include: Gaussian 94, revision C (M. J. Frisch, Gaussian, Inc., Pittsburgh, PA, ©1995); AMBER, version 4.1 (P. A. Kollman, University of California at San Francisco, ©1995); QUANTA/CHARMM (Molecular Simulations, Inc., San Diego, CA, ©1995); Insight II/Discover (Molecular Simulations, Inc., San Diego, CA ©1995); DelPhi (Molecular Simulations, Inc., San Diego, CA ©1995); and AMSOL (Quantum Chemistry Program Exchange, Indiana University). These programs may be implemented, for instance, using a Silicon Graphics workstation such as an Indigo^2 with "IMPACT" graphics. Other hardware systems and software packages will be known to those skilled in the art.

Another approach enabled by this invention, is the computational screening of small molecule databases for chemical entities or compounds that can bind in whole, or in part, to a human α-GAL binding pocket. In this screening, the quality of fit of such entities to the binding site may be judged either by shape complementarity or by estimated interaction energy (E. C. Meng et al., *J. Comp. Chem.*, 1992, 13:505-524).

According to another embodiment, the invention provides compounds which associate with a human α-GAL-like binding pocket produced or identified by the method set forth above.

The structure coordinates set forth in FIG. 1 can also be used to aid in obtaining structural information about another crystallized molecule or molecular complex. This may be achieved by any of a number of well-known techniques, including molecular replacement.

Therefore, in another aspect this invention provides a method of utilizing molecular replacement to obtain structural information about a molecule or molecular complex whose structure is unknown comprising the steps of:

a) crystallizing said molecule or molecular complex of unknown structure;

b) generating X-ray diffraction data from said crystallized molecule or molecular complex; and

c) applying at least a portion of the structure coordinates set forth in FIG. 1 to the X-ray diffraction data to generate a three-dimensional electron density map of the molecule or molecular complex whose structure is unknown.

By using molecular replacement, all or part of the structure coordinates of the human α-GAL as provided by this invention (and set forth in FIG. 1) can be used to determine the structure of a crystallized molecule or molecular complex whose structure is unknown more quickly and efficiently than attempting to determine such information *ab initio*.

Molecular replacement provides an accurate estimation of the phases for an unknown structure. Phases are a factor in equations used to solve crystal structures that can not be determined directly. obtaining accurate values for the phases, by methods other than molecular replacement, is a time-consuming process that involves iterative cycles of approximations and refinements and greatly hinders the solution of crystal structures. However, when the crystal structure of a protein containing at least a homologous portion has been solved, the phases from the known structure provide a satisfactory estimate of the phases for the unknown structure.

Thus, this method involves generating a preliminary model of a molecule or molecular complex whose structure coordinates are unknown, by orienting and positioning the relevant portion of the human α-GAL according to FIG. 1 within the unit cell of the crystal of the unknown molecule or molecular complex so as best to account for the observed X-ray diffraction data of the crystal of the molecule or molecular complex whose structure is unknown. Phases can then be calculated from this model and combined with the observed X-ray diffraction data amplitudes to generate an electron density map of the structure whose coordinates are unknown. This, in turn, can be subjected to any well-known model building and structure refinement techniques to provide a final, accurate structure of the unknown crystallized molecule or molecular complex [E. Lattman, *Meth. Enzymol.*, 1985, 115:55-77; M. G. Rossmann, ed., "The Molecular Replacement Method", *Int. Sci. Rev. Ser.*, No. 13, Gordon & Breach, New York (1972)].

The structure of any portion of any crystallized molecule or molecular complex that is sufficiently homologous to any portion of human α-GAL can be resolved by this method.

In a preferred embodiment, the method of molecular replacement is utilized to obtain structural information about another galactosidase. The structure coordinates of human α-GAL as provided by this invention are particularly useful in solving the structure of other isoforms of α-GAL or other α-GAL-containing complexes.

Furthermore, the structure coordinates of human α-GAL as provided by this invention are useful in solving the structure of α-GAL proteins that have amino acid substitutions, additions and/or deletions (referred to collectively as "human α-GAL mutants", as compared to naturally occurring human α-GAL isoforms. These human α-GAL mutants may optionally be crystallized in co-complex with a chemical entity, such as galactose. The crystal structures of a series of such complexes may then be solved by molecular replacement and compared with that of wild-type human α-GAL. Potential sites for modification within the various binding sites of the enzyme may thus be identified. This information provides an additional tool for determining the most efficient binding interactions, for example, increased hydrophobic interactions, between human α-GAL and a chemical entity or compound.

The structure coordinates are also particularly useful to solve the structure of crystals of human α-GAL or human α-GAL homologues co-complexed with a variety of chemical entities. This approach enables the determination of the optimal sites for interaction between chemical entities, including between candidate human α-GAL agonists and human α-GAL. For example, high resolution X-ray diffraction data collected from crystals exposed to different types of solvent allows the determination of where each type of solvent molecule resides. Small molecules that bind tightly to those sites can then be designed and synthesized and tested for their human α-GAL agonistic activity.

All of the complexes referred to above may be studied using well-known X-ray diffraction techniques and may be refined versus 1.5-3.5 Å resolution X-ray data to an R value of about 0.20 or less using computer software, such as X-PLOR [Yale University, ©1992, distributed by Molecular Simulations, Inc.; see, e.g., Blundell & Johnson, supra; *Meth. Enzymol.*, vol. 114 & 115; H. W. Wyckoff et al., eds., Academic Press (1985)]. This information may thus be used to optimize known human α-GAL agonists/antagonists/inhibitors, and more importantly, to design new human α-GAL agonists/antagonists/inhibitors.

The invention will be more fully understood by reference to the following examples. These examples, however, are merely intended to illustrate the embodiments of the invention and are not to be construed to limit the scope of the invention.

Examples

Experimental Procedures
Materials and Methods

Cloning and Expression of human α-Galactosidase:

Human α-Galactosidase (Replagal™ lot G302-010, Transkaryotic Therapies, Inc.) was produced using gene activation technology as described in detail in U.S. Patents Nos. 5,733,761, 6,270,989, and 6,565,844, all of which are expressly incorporated herein by reference. Briefly, regulatory (e.g., a viral promoter) and structural DNA sequences were inserted upstream of the endogenous human α-Galactosidase genomic locus (GenBank Acc. No. HSU78027) in a human cell (e.g., HT-1080) using homologous recombination. As a result, α-Galactosidase expression was enhanced resulting in secretion of α-Galactosidase protein to the culture supernatant. The α-Galactosidase polypeptide was then highly purified using the methods described in detail in U.S. Patents Nos. 6,083,725, 6,395,884 and 6,458,574, all of which are expressly incorporated herein by reference.

Crystallization and x-ray data collection:

Human α-Galactosidase was concentrated to 40mg/ml in 20mM TrisHCl pH 7.5 prior to crystallization trials. Crystals were grown in either hanging or sitting drops via vapor diffusion against a reservoir solution of 30% polyethylene glycol (PEG) 4000 (Fluka), 100mM TrisHCl pH 8.0, and 200mM ammonium sulfate. Crystals were then harvested into 35% PEG 4000, 100mM TrisHCl pH 7.5, and 20% (v:v) ethylene glycol. Crystals were cooled in liquid nitrogen and then transferred into a gaseous nitrogen stream at 100K for x-ray data collection. Ligand-soaked crystals were transferred into 31% PEG 3350, 100mM sodium acetate pH 5.5, and 110mM D-(+)-galactose (Sigma) prior to nitrogen cooling and x-ray data collection. Despite efforts to increase their size, the crystals never grew larger than 30 x 30 x 100 μm. For each crystal, 180° of diffraction data were collected at beamline 22-ID at the Advanced Photon Source. Processing of x-ray images using the HKL2000 package (Otwinowski, Z. & Minor, W., *Methods in Enzymology*, 1997, 276:307-326) revealed unit cell constants of approximately 89Å x 89Å x 215Å in space $P3_121$ or $P3_221$. The diffraction from these crystals proved to be extremely anisotropic, with reflections visible to 2.8Å in the direction of the crystallographic *c* axis, but only to approximately 4Å in the perpendicular directions. This, plus the high redundancy and weak diffraction overall from the small crystals, resulted in very poor merging statistics. The native frames were initially processed

using HKL2000 to 3.25Å. Reprocessing the frames in MOSFLM and SCALA (Collaborative Computational Project, *Acta Crystallogr.*, 1994, D50:760-763) with anisotropic diffraction limits produced maps of lower quality, so this route was abandoned, and the original data were used throughout the refinement. The high resolution limits were determined from the shell where $\langle I/\sigma_I \rangle$ dropped to 2. Intensities were adjusted with TRUNCATE (Collaborative Computational Project, *Acta Crystallogr.*, supra) prior to molecular replacement and refinement.

Phasing, model building, and refinement:

Molecular replacement calculations were performed in the program AmoRe (Collaborative Computational Project, *Acta Crystallogr.*, 1994, D50:760-763) using a homology model of the human α-GAL protein built from the crystal structure of chicken α-NAGAL (Garman, S. C., et al., *Structure*, 2002, 10:425-434). The dimeric model was rotated and translated against the 8-4Å diffraction amplitudes. Molecular replacement in both enantiomorphic space group possibilities identified a dimer of α-GAL in the asymmetric unit of space group $P3_221$ as the top solution, with a correlation coefficient of 28 and an R_{factor} of 58. Inspection of the packing showed no steric clashes in a unit cell with 50% solvent content. Rigid body refinement in the programs AMoRe and CNS (Brünger, A. T., et al., *Acta Crystallogr. D Biol. Crystallogr.* 1998, 54:905-21) was followed by model building in the program O (Jones, T. A., et al., *Acta Crystallogr.*, 1991, A47:110-9). Residue numbering of the α-GAL protein begins at the secretory signal; the mature protein begins at amino acid 32. Refinement protocols in CNS included conjugate gradient minimization, simulated annealing, and temperature factor refinement. Models were built into σ_A weighted simulated annealing composite omit maps calculated in CNS. Strong two-fold non-crystallographic symmetry restraints (300 kcal/mol-Å^2) were imposed on all atoms in the early stages of refinement, and later relaxed for the atoms that differ between the two halves of the dimer, including those in crystal contacts and N-linked carbohydrate atoms. Refinement steps were accepted only if they reduced the R_{free} (of a test set comprised of 820 reflections, 5% of the total, selected using resolution shells). The R_{work} and R_{free} for the native structure are 26.2% and 30.1%, respectively, using all reflections. Because of the limited resolution, side chain rotamers were typically chosen during manual rebuilding to be consistent with the 1.9Å chicken α-NAGAL structure.

Sequence alignments, calculations, and figures:

Beginning with the human α-GAL sequence, a BLAST search (Altschul, S. F., et al., *Nucleic Acids Res* 1997, 25:3389-402) of the NCBI non-redundant protein sequence database found the 50 closest sequences. After removal of 10 highly redundant sequences, the remaining 40 sequences were multiply aligned in CLUSTALW (Thompson, J. D., et al., *Nucleic Acids Res,* 1994, 22:4673-80), then converted into a phylogeny tree using the programs WEIGHBOR (Bruno, W. J., et al., *Mol Biol Evol,* 2000, 17:189-97) and PHYLIP (Felsenstein, J., Phylogeny Inference Package version 3.6, 1995, Department of Genetics, University of Washington, Seattle, WA). The accession codes of the 40 sequences from the NCBI non-redundant database are: NP_000160, NP_038491, CAC44626, XP_318652, AAM29494, XP_315871, NP_611119, AAL87527, XP_235515, NP_000253, 1KTB, NP_506031, NP_822650, NP_624613, AAC99325, NP821803, BAB83765, ZP_00066516, AAM13199, AAP04002, AAG13536, BAC55816, NP_568193, CAC08337, Q42656, BAC66445, T06388, T10860, P14749, AAF04591, BAB12570, NP191190, S45453, P41947, NP_595012, AAG24511, AAB35252, JC5558, NP_811977, and P28351. Sequence identities were calculated without signal sequences in EMBOSS using a Needleman-Wunsch full path matrix algorithm with the BLOSSUM62 matrix, a gap penalty of 10, and a gap extension penalty of 0.5 (Needleman, S. B. & Wunsch, C. D., *J Mol Biol* 1970, 48:443-53). Least squares superpositions of coordinates were performed using the program LSQMAN (Kleywegt, G. J. & Read, R. J., *Structure,* 1997, 5:1557-1569) with a distance cutoff of 3.8Å, and coordinate transformations were applied using the program MOLEMAN2 (Kleywegt, G. J. & Read, R. J., *Structure,* 1997, 5:1557-1569). Molecular figures were prepared using the programs MOLSCRIPT (Kraulis, P. J., *J. Appl. Crystallogr.,* 1991, 24:946-950), BOBSCRIPT (Esnouf, R. M., *J. Mol. Graph. Model.* 1997, 15:132-34), and GRASP (Nicholls, A., et al., *Proteins* 1991, 11:281-96).

Results

The structure of human α-GAL was determined by x-ray crystallographic methods to a resolution limit of 3.25 Å (see Table 1 below).

Table 1: Crystallographic Statistics

	Data	
	Native	Ligand
Beamline	APS 22-ID	APS 22-ID
Wavelength, Å	1.033	1.033
Space Group	$P3_221$	$P3_221$
Cell Lengths, Å	88.5, 88.5, 215.5	90.0, 90.0, 216.5
Resolution, Å (last shell)	50-3.25 (3.37-3.25)	50-3.45 (3.57-3.45)
No. of Observations (last shell)	156309 (9921)	91651 (8610)
No. of Unique Observations (last shell)	16080 (1542)	13922 (1323)
Completeness, % (last shell)	99.8 (98.7)	99.7 (98.9)
Multiplicity (last shell)	9.7 (6.5)	6.6 (6.7)
R_{sym} (last shell)	0.246 (0.740)	0.200 (0.745)
$\langle I/\sigma_I \rangle$ (last shell)	9.1 (2.4)	8.2 (2.4)
Refinement		
R_{work} / R_{free}	26.2% / 30.1%	28.5% / 32.1%
No. of Atoms: Protein	6251	6251
Carbohydrate	268	331
Other	18	18
Ramachandran: Favored	74.4%	74.3%
Allowed	23.0%	23.8%
Generous	2.5%	1.5%
Forbidden	0%	0.4%
RMS Deviations: Bonds	0.009 Å	0.008 Å
Angles	1.5°	1.5°
Dihedrals	22.8°	22.8°
Impropers	0.9°	0.8°

$R_{sym}=\Sigma_h\Sigma_i|I_{h,i}-\langle I_h\rangle|/\Sigma_h\Sigma_i|I_{h,i}|$, where $I_{h,i}$ is the i^{th} intensity measurement of reflection h and $\langle I_h\rangle$ is the average intensity of that reflection.

$R_{work}/R_{free}=\Sigma_h||F_P|-|F_C||/\Sigma_h|F_P|$, where F_C is the calculated and F_P is the observed structure factor amplitude of reflection h fo the working/free set, respectively.

The x-ray structure reveals human α-GAL as a homodimeric glycoprotein with each monomer composed of two domains, a $(\beta/\alpha)_8$ domain containing the active site and a C-terminal domain containing eight antiparallel β strands on two sheets in a β sandwich (FIG. 6a). After removal of the 31 residue signal sequence, the first domain extends from residues 32 to 330 and contains the active site formed by the C-terminal ends of the β strands at the center of barrel, a typical location for the active site in $(\beta/\alpha)_8$ domains. The second domain, comprised of residues 331 to 429, packs against the first with an extensive interface, burying 2500 $Å^2$ of surface area within one monomer. The dimer has overall protein dimensions of

approximately 75 x 75 x 50Å (FIG. 6b). The molecule is concave in the third dimension and varies in thickness from approximately 20 to 50Å (FIG. 6c). Electron density is visible for 390 and 391 amino acid residues (out of 398 total) in the two copies of the monomer in the crystallographic asymmetric unit; the missing residues occur at the C-terminus. The two monomers pack with an interface that extends the 75Å width of the dimer and buries 2200 $Å^2$ of surface area. In the dimer interface, 30 residues from each monomer contribute to the interface, from loops β1-α1, β6-α6, β7-α7, β8-α8, β11-β12, and β15-β16. The dimer is markedly negatively charged, as seen in a surface electrostatic potential (FIG. 6d). With 47 carboxylate groups and only 36 basic residues in the 398 residues in the molecule, the overall charge per monomer is expected to be −11 at neutral pH. The carboxylates are most concentrated around the active site, but in the low pH of the lysosome, many of these groups become protonated, reducing the charge on the molecule. In addition to the negative charges on the protein, the N-linked carbohydrate is highly phosphorylated and sialylated (Lee, K., et al., *Glycobiology*, 2003, 13:305-13), further increasing its negative electrostatic potential. The N-linked carbohydrates fall distal to the active sites (FIG. 6d). Each monomer contains the three N-linked carbohydrate sites, five disulfide bonds (C52-C94, C56-C63, C142-C172, C202-C223, and C378-C382), two unpaired cysteines (C90 and C174), and three *cis* prolines (P210, P380, and P389).

As mentioned above, the C-terminal seven and eight residues of each chain have no electron density associated with them and are presumably disordered. This disorder is consistent with the observation of slight heterogeneity in the C-terminus of recombinant human α-GAL, where the truncation of one or two residues from the C-terminus can occur but has no effect upon the activity of the enzyme (Lee, K., et al., *Glycobiology*, 2003, 13:305-13). The structure offers no support for the observation that the removal of 2 to 10 residues from the C-terminus increases the activity of α-GAL (Miyamura, N., et al., *J Clin Invest*, 1996, 98:1809-17), because the final residue seen in the structure falls at least 45Å from each active site and on the opposite face of the molecule.

Substrate specificity and catalytic mechanism

In both the native and galactose-soaked crystal structures, electron density appears in the two crystallographically-independent active sites (FIGS. 8a and b). In the galactose-soaked crystal, this density represents α-galactose, the normal catalytic product of the enzyme (K_i ~1mM). In the native structure, this density most likely derives from the

cryoprotectant ethylene glycol, a weak inhibitor of glycoside hydrolases (Tsitsanou, K. E., et al., *Protein Sci,* 1999, 8:741-9), analogous to the insertion of glycerol into carbohydrate binding sites on proteins (Garman, S. C., et al., *Structure,* 2002, 10:425-434; Tsitsanou, K. E., et al., *Protein Sci,* 1999, 8:741-9; Schmidt, A., et al., *Protein Sci,* 1998, 7:2081-8). The two active sites of the dimer are separated by approximately 50 Å. As the enzyme shows little change between the liganded and unliganded structures, there is no evidence for cooperativity between the two sites, although the biochemical evidence is mixed (Dean, K. J. & Sweeley, C. C., *J Biol Chem,* 1979, 254:9994-10000; Bishop, D. F. & Desnick, R. J., *J Biol Chem,* 1981, 256:1307-16).

We have determined that human α-GAL binds α-galactose by making specific contacts to each functional group on the monosaccharide. Residues from seven loops in domain 1 form the *active site*: β1-α1, β2-α2, β3-α3, β4-α4, β5-α5, β6-α6, and β7-α7. The active site is formed by the side chains of residues W47, D92, D93, Y134, C142, K168, D170, E203, L206, Y207, R227, D231, D266, and M267. Thus, a binding pocket defined by the structural coordinates of these amino acids, as set forth in FIG. 1; or a binding pocket whose root mean square deviation from the structure coordinates of the backbone atoms of these amino acids is not more than 1.5 Å is considered a human α-GAL-like binding pocket of this invention. In important embodiments, C172 makes a disulfide bond to C142.

In the α-GAL/α-NAGAL family, specificity for the 2 position on the galactose ligand occurs via the β5-α5 loop. This was called the "N-acetyl recognition loop" in α-NAGAL (Garman, S. C., et al., *Structure,* 2002, 10:425-434); in the overall α-GAL/α-NAGAL family "2 position recognition loop" or "2 loop" is appropriate. This loop falls near the boundary of exons 4 and 5 of animal α-GAL/α-NAGAL, which have a small insertion in this region, resulting in a short helical stretch at the top of the β5 strand; this insertion is absent in other species. Plant and fungal α-GALs use a Cys and a Trp on this loop to coordinate the 2-hydroxyl on galactose; animal α-GAL uses a Glu and a Leu to recognize the 2-hydroxyl (FIG. 7, green) while animal α-NAGAL uses a Ser and an Ala to recognize an N-acetyl at the 2 position (FIG. 7, yellow). In the animal enzymes, the larger Glu and Leu side chains sterically block the larger N-acetyl substituent, while the smaller Ser and Ala side chains nicely accommodate an N-acetyl group and tolerate a hydroxyl group.

With three different conformations in the 2 loop now identified, the substrate specificity of the other members of the family can be categorized by homology. For

example, genome sequencing of *Drosophila melanogaster* and *Anopheles gambiae* have each identified pairs of genes in the α-GAL family. By examination of the sequences in the 2 loop, two are clearly α-NAGALs while the other two appear to be α-GALs (FIG. 7, yellow and purple). Surprisingly, *Aspergillus niger* contains an enzyme identified as α-GAL that, although only 30% identical to the animal protein sequences, contains a 2 loop virtually identical to animal α-NAGALs (FIG. 7, yellow). We predict this enzyme is primarily an α-NAGAL with partial α-GAL activity, much like human α-NAGAL, which was originally thought to be an α-GAL based upon similar activity (Dean, K. J., et al., *Biochem. Biophys. Res. Commun.*, 1977, 77:1411-7; Schram, A. W., et al., *Biochim. Biophys. Acta*, 1977, 482:138-44).

Although human α-GAL makes contacts to each functional group on the α-galactose ligand, the enzyme shows little specificity for the distal portion of the substrate beyond the glycosidic linkage, and the active site cleft is found in a broad opening on the concave surface of the enzyme (FIG. 6c). The lack of substrate specificity of human α-GAL beyond the terminal α-galactose differs slightly from the specificity of other α-GALs, which act only upon substrates containing terminal α1-6 galactose groups (Kim,W.D., et al., *Phytochemistry*, 2002, 61:621-30). This increased specificity of plant α-GALs may derive from their monomeric structure, as residues buried in the dimer interface of animal α-GALs (*e.g.*, those on the β1-α1 loop - Fujimoto, Z., et al., *J Biol Chem*, 2003, 278:20313-8) are available for ligand recognition in monomeric α-GALs.

Both α-GALs and α-NAGALs are α retaining exoglycosidases, where both the substrate and product of the catalytic reactions are α anomers at the 1 position on the galactose ring. This retention of anomeric configuration is accomplished by a double displacement catalytic mechanism where the anomeric carbon undergoes two successive nucleophilic attacks (Vasella, A., et al., *Curr Opin Chem Biol*, 2002, 6:619-29). The two sequential inversions of the anomeric carbon lead to retention of the configuration at the end of the catalytic cycle. In two α-GALs from different species, peptic digestion of covalently trapped intermediates has identified the specific aspartic acid acting as the catalytic nucleophile (Hart, D. O., et al., *Biochemistry*, 2000, 39:9826-36; Ly, H. D., et al., *Carbohydr. Res.*, 2000, 329:539-47). These data, combined with the high resolution structure of chicken α-NAGAL, predict the catalytic mechanism of human α-GAL. In human α-GAL, the first nucleophilic attack upon the substrate comes from D170, cleaving the glycosidic linkage and

leading to a covalent enzyme-intermediate complex. In the second step of the reaction, a water molecule (deprotonated by D231) attacks C1 of the covalent intermediate, liberating the second half of the catalytic product and regenerating the enzyme in its initial state. Human α-GAL operates most efficiently at low pH, consistent with its highly acidic composition and its lysosomal location.

Retaining glycosidases typically have distances of 5–6Å between catalytic carboxylates, while inverting glycosidases typically have distances of 9–11Å between these residues (McCarter, J. D. & Withers, S. G., *Curr. Opin. Struct. Biol.* 1994, 4:885-92). From these distances, it has been possible to reliably predict the mechanism and function of a glycosidase given its structure. However, this rule must be reconsidered in light of the new structures in the α-GAL/α-NAGAL family: for the known structures in the family, the closest approach of the two catalytic carboxylates is 6.5-7Å, among the largest distances seen for retaining glycosidases.

Comparison to related molecules

Human α-GAL is most closely related to α-NAGAL, with the human enzymes sharing 49% amino acid sequence identity. A phylogeny tree (FIG. 7) of the 40 proteins most closely related to human α-GAL reveals that vertebrate α-GAL and α-NAGAL cluster and have evolved from a common precursor (Wang, A. M., et al., *J. Biol. Chem.*, 1990, 265:21859-66; Wang, A. M., et al., *Mol. Genet. Metab.*, 1998, 65:165-73), while plant and other α-GALs segregate into distinct clusters. The 40 proteins share from 32 to 78% amino acid sequence identity with human α-GAL, with the sequence conservation higher in domain 1, particularly among residues forming the active site.

The 40 sequences include two structures of a family of 27 glycoside hydrolases: human α-GAL and chicken α-NAGAL (Garman, S. C., et al., *Structure,* 2002, 10:425-434) (51% amino acid identity with human α-GAL). Both enzymes share common tertiary structures: each monomer contains both a $(\beta/\alpha)_8$ N-terminal domain and an antiparallel β C-terminal domain. The N-terminal domains superimpose very well: the chicken α-NAGAL superimposes on the human α-GAL with a root mean square deviation (RMSD) of 0.7Å for 295 Cα atoms. Domain 2, with lower sequence conservation, superimposes less well: the chicken domain superimposes on human with an RMSD of 1.3Å for 80 Cα atoms. The most important residue in the dimer interface, F273, has 130Å^2 surface area buried per monomer

upon formation of the dimer. This residue alone (out of the 30 in the dimer interface) accounts for 12% of the buried surface area in the interface. This residue is a Phe or Tyr in most animal α-GALs and α-NAGALs, while in plant α-GALs, the equivalent residue is a Gly. Thus, this residue predicts the dimerization state of the enzyme in different species: Phe or Tyr indicates the enzyme is a dimer, while Gly indicates the enzyme remains a monomer.

N-linked carbohydrate and lysosomal targeting

Both endogenous and recombinant α-GAL show a large amount of heterogeneity in the attached carbohydrate, with over 70 different glycoforms (Lee, K., et al., *Glycobiology,* 2003, 13:305-13; Bishop, D. F. & Desnick, R. J., *J Biol Chem,* 1981, 256:1307-16; Matsuura, F., et al., *Glycobiology,* 1998, 8:329-39; LeDonne, N. C., et al., *Arch Biochem Biophys,* 1983, 224:186-95; Ioannou, Y. A., et al., *Biochem J.,* 1998, 332:789-97). Despite the resolution of the human α-GAL structure, extensive density appears for N-linked carbohydrates. Each monomer has four potential N-linked carbohydrate attachment sites (N139, N192, N215, and N408), the first three of which show carbohydrate electron density. The fourth potential site at N408 contains the amino acid sequence Asn-Pro-Thr, a sequence not ordinarily recognized by the carbohydrate attachment machinery (Gavel, Y. & von Heijne, G., *Protein Eng.* 1990, 3:433-42), consistent with the absence of carbohydrate at this location in recombinant α-GAL expressed in COS cells (Ioannou, Y. A., et al., *Biochem J.,* 1998, 332:789-97), CHO cells and human cells (Lee, K., et al., *Glycobiology,* 2003, 13:305-13). The three sites with attached carbohydrate show density in both independent monomers in the asymmetric unit and in both the native and ligand-soaked crystals. Electron density for the carbohydrate attached to N192 is shown in FIG. 9.

The glycosylation pattern differs among the structures in the α-GAL/α-NAGAL family. The chicken α-NAGAL and human α-GAL each contain three sites, two of which (N192 and N215 in α-GAL numbering) are in common. These two carbohydrates are attached to helices α4 and α5, away from the active site and from the dimer interface. The N-linked carbohydrate at N215 is necessary but not sufficient for successful secretion of the active enzyme, and the N192 carbohydrate site improves secretion of the active enzyme (Ioannou, Y. A., et al., *Biochem J.,* 1998, 332:789-97). These two sites have a large proportion of oligomannose-containing carbohydrate, while the N139 site contains no oligomannosyl carbohydrate, only complex carbohydrate (Lee, K., et al., *Glycobiology,* 2003, 13:305-13). Thus, the N-linked carbohydrate at N192 and N215 is responsible for targeting

the glycoprotein to the lysosome, because only oligomannosyl carbohydrates contain the lysosomal targeting signal, mannose-6-phosphate (Ghosh, P., et al., *Nat Rev Mol Cell Biol,* 2003, 4:202-12). The N192 and N215 side chains are 20Å apart on the same face of the molecule, 24 and 23Å away from the active site respectively (FIG. 6d). Unlike many N-linked carbohydrates that lie along the surface of the protein and shield surface-exposed hydrophobic residues, the carbohydrate at N215 extends away from the protein, in an ideal position to bind to the mannose-6-phosphate receptor (M6PR). Mutation of N215 to Ser eliminates the carbohydrate attachment site, causing inefficient trafficking of the enzyme to the lysosome (Ioannou, Y. A., et al., *Biochem J.*, 1998, 332:789-97) and leading ultimately to the development of Fabry disease (Davies, J. P., et al., *Hum Mol Genet,* 1993, 2:1051-3). Unique among the carbohydrate attachment sites, N215 shows different primary glycoforms in the two recombinant enzymes used as Fabry disease treatments: in Replagal this site is mostly singly phosphorylated oligomannose, while in Fabrazyme this site is mostly biphosphorylated oligomannose (Lee, K., et al., *Glycobiology,* 2003, 13:305-13). The M6PR transport pathway is also used by the recombinant glycoprotein in the treatment for Fabry disease: upon injection into the bloodstream of a Fabry patient, the recombinant glycoprotein is delivered into the lysosomes of affected cells via M6PR on the surface. The pharmacological differences between the Replagal and Fabrazyme α-GAL preparations derive from the different glycoforms attached to N192 and N215.

Detailed Description of the Drawings

Figure 1. Atomic structure coordinates of human α-GAL

Figure 1A through 1Z list the atomic structure coordinates for human α-GAL as derived by X-ray diffraction from a crystal of human α-GAL. The following abbreviations are used in FIG. 1: "Atom type" refers to the element whose coordinates are measured. The first letter in the column defines the element.

"X, Y, Z" crystallographically define the atomic position of the element measured.

"OCC" is an occupancy factor that refers to the fraction of the molecules in which each atom occupies the position specified by the coordinates. A value of "1" indicates that each atom has the same conformation, i.e., the same position, in all molecules of the crystal.

"B" is a thermal factor that measures movement of the atom around its atomic center.

Figure 2. Computer Diagram

Computer used to generate a three-dimensional graphical representation of a molecule or molecular complex according to this invention.

Figure 3. Cross section of a magnetic storage medium.

Figure 4. Cross section of an optically-readable data storage medium.

Figure 5. The reaction catalyzed by α-GAL

(a) The general reaction of α-GAL. A terminal galactose in the α anomeric configuration is cleaved from an oligosaccharide, glycoprotein, or glycolipid, producing α-galactose (Gal(α1)) and an alcohol. The carbons are numbered on α-galactose. (b) α-GAL and Fabry disease. The Fabry disease substrate globotriaosylceramide is cleaved by α-GAL to form lactosylceramide. In the absence of the functional enzyme, globotriaosylceramide accumulates in the tissues.

Figure 6. The structure of α-GAL

(a) The α-GAL monomer. The monomer is colored from N (blue) to C terminus (red). Domain 1 contains the active site at the center of the β strands in the $(\beta/\alpha)_8$ barrel, while domain 2 contains antiparallel β strands. The galactose ligand is shown in yellow and red CPK atoms. (b) and (c) Two views of the α-GAL dimer. The ribbon and ligand are colored as in (a). The active sites are 50Å apart in the dimer, on the concave surface of the molecule as viewed from the side in (c). (d) The surface of α-GAL. Two views of the molecular surface are shown with a probe radius of 1.4Å, with the electrostatic surface potential plotted from –10kT (red) to +10kT (blue). The N-linked carbohydrate is shown in green and is not included in the surface potential calculation. The orientation at left is similar to (b).

Figure 7. Evolutionary relationships in the α-GAL/α-NAGAL family

A phylogeny tree demonstrates the relationships of 40 sequences most closely related to human α-GAL. The length of the line connecting each name represents the distance between the two sequences. The sequences above the black line have an insertion creating a turn of helix in the β5/α5 loop, while the lower sequences lack this insertion. α-NAGALs are in yellow, while α-GALs are in green, blue and purple.

Figure 8. The active site of α-GAL

(a) and (b) Electron density in human α-GAL from native and galactose-soaked crystals. The electron density is shown in stereo contoured at 1.1σ from a σ_A-weighted simulated annealing composite omit map, with side chains from active site residues colored as in fig 6. The red density does not derive from the protein and is interpreted as an ethylene glycol

molecule in (a) and the catalytic product galactose in (b). In (c) the superimposed active sites of human α-GAL (green), and chicken α-NAGAL (yellow) are shown in stereo. The β5-α5 loop that differs among the two structures appears at lower right.

Figure 9. N-linked carbohydrate

The N-linked carbohydrate attached to N192 is shown with helix α4. Electron density from a σ_A-weighted simulated annealing composite omit map (grey) is contoured at 1.1σ. Five sugar residues have been built into the electron density at this site.

Figure 10. The active site of α-GAL

A schematic representation of the human α-GAL active site with a galactose molecule buried within.

Equivalents

Those skilled in the art will recognize, or be able to ascertain using no more than routine experimentation, many equivalents to the specific embodiments of the invention described herein. Such equivalents are intended to be encompassed by the following claims.

All references disclosed herein are incorporated by reference in their entirety. What is claimed is presented below and is followed by a Sequence Listing.

We claim:

Claims

1. A computer for producing a three-dimensional representation of:

a. a molecule or molecular complex, wherein said molecule or molecular complex comprises a binding pocket defined by structure coordinates of human α-galactosidase amino acids W47, D92, D93, Y134, C142, K168, D170, E203, L206, Y207, R227, D231, D266, and M267, according to FIG. 1; or

b. a homologue of said molecule or molecular complex, wherein said homologue comprises a binding pocket that has a root mean square deviation from the backbone atoms of said amino acids of not more than 1.5 Å, wherein said computer comprises:

(i) a computer-readable data storage medium comprising a data storage material encoded with computer-readable data, wherein said data comprises the structure coordinates of human α-galactosidase amino acids W47, D92, D93, Y134, C142, K168, D170, E203, L206, Y207, R227, D231, D266, and M267, according to FIG. 1;

(ii) a working memory for storing instructions for processing said computer-readable data;

(iii) a central-processing unit coupled to said working memory and to said computer-readable data storage medium for processing said computer-machine readable data into said three-dimensional representation; and

(iv) a display coupled to said central-processing unit for displaying said three-dimensional representation.

2. The computer according to claim 1, wherein the computer produces a three-dimensional representation of:

a. a molecule or molecular complex defined by structure coordinates of all of the human α-galactosidase amino acids set forth in FIG. 1, or

b. a homologue of said molecule or molecular complex, wherein said homologue comprises a binding pocket that has a root mean square deviation from the backbone atoms of said amino acids of not more than 1.5 Å; and

wherein said computer readable data contains the coordinates of all of the human α-galactosidase amino acids set forth in FIG. 1.

3. A computer for determining at least a portion of the structure coordinates corresponding to X-ray diffraction data obtained from a molecule or molecular complex, wherein said computer comprises:

(a) a computer-readable data storage medium comprising a data storage material encoded with machine-readable data, wherein said data comprises at least a portion of the structural coordinates of human α-galactosidase according to FIG. 1;

(b) a computer-readable data storage medium comprising a data storage material encoded with computer-readable data, wherein said data comprises X-ray diffraction data obtained from said molecule or molecular complex;

(c) a working memory for storing instructions for processing said computer-readable data of (a) and (b);

(d) a central-processing unit coupled to said working memory and to said computer-readable data storage medium of (a) and (b) for performing a Fourier transform of the machine readable data of (a) and for processing said computer-readable data of (b) into structure coordinates; and

(e) a display coupled to said central-processing unit for displaying said structure coordinates of said molecule or molecular complex.

4. The computer according to claim 3, wherein said molecule or molecular complex comprises a polypeptide having α-galactosidase activity.

5. A method for evaluating the potential of a chemical entity to associate with:

a) a molecule or molecular complex comprising a binding pocket defined by structure coordinates of human α-galactosidase amino acids W47, D92, D93, Y134, C142, K168, D170, E203, L206, Y207, R227, D231, D266, and M267, according to FIG. 1, or

b) a homologue of said molecule or molecular complex, wherein said homologue comprises a binding pocket that has a root mean square deviation from the backbone atoms of said amino acids of not more than 1.5 Å comprising the steps of:

i) employing computational means to perform a fitting operation between the chemical entity and a binding pocket defined by structure coordinates of human α-galactosidase amino acids W47, D92, D93, Y134, C142, K168, D170, E203, L206, Y207, R227, D231, D266, and M267, according to FIG. 1 ± a root mean square deviation from the backbone atoms of said amino acids of not more than 1.5 Å; and

ii) analyzing the results of said fitting operation to quantify the association between the chemical entity and the binding pocket.

6. The method according to claim 5, wherein the method evaluates the potential of a chemical entity to associate with:

a. defined by structure coordinates of all of the human α-galactosidase amino acids, as set forth in FIG. 1, or

b. a homologue of said molecule or molecular complex having a root mean square deviation from the backbone atoms of said amino acids of not more than 1.5 Å.

7. A method for identifying a potential agonist or antagonist of a molecule comprising a human α-galactosidase domain 1-like binding pocket comprising the steps of:

a. using the atomic coordinates of W47, D92, D93, Y134, C142, K168, D170, E203, L206, Y207, R227, D231, D266, and M267, according to FIG. 1 ± a root mean square

deviation from the backbone atoms of said amino acids of not more than 1.5 Å, to generate a three-dimensional structure of molecule comprising a human α-galactosidase domain 1-like binding pocket;

b. employing said three-dimensional structure to design or select said potential agonist or antagonist;

c. synthesizing said agonist or antagonist; and

d. contacting said agonist or antagonist with said molecule to determine the ability of said potential agonist or antagonist to interact with said molecule.

8. The method according to claim 7, wherein in step a., the atomic coordinates of all the amino acids of human α-galactosidase according to FIG. 1 ± a root mean square deviation from the backbone atoms of said amino acids of not more than 1.5 Å are used.

Abstract

This invention pertains to the X-ray crystal structure of the human α-galactosidase glycoprotein. More specifically, the invention relates to crystallized compositions of human α-galactosidase and to crystallized complexes of human α-galactosidase and its catalytic product α-galactose. The invention further relates to a computer programmed with the structure coordinates of the human α-galactosidase's active site wherein said computer is capable of displaying a three-dimensional representation of that active site. The invention also relates to methods for rational drug design based on the structural data for human α-galactosidase provided on computer readable media, as analyzed on a computer system having suitable computer algorithms.

FIGURE 1

HUMAN α-GALACTOSIDASE COORDINATES

CHAIN A

		Atom Type	Resid	#	X	Y	Z	OCC	B	
ATOM	1	N	LEU	A	32	-14.824	53.775	124.809	1.00	67.49	N
ATOM	2	CA	LEU	A	32	-16.090	53.328	125.458	1.00	67.86	C
ATOM	3	C	LEU	A	32	-15.906	51.947	126.081	1.00	66.10	C
ATOM	4	O	LEU	A	32	-15.672	50.968	125.380	1.00	67.72	O
ATOM	5	CB	LEU	A	32	-17.218	53.293	124.425	1.00	71.62	C
ATOM	6	CG	LEU	A	32	-18.563	52.754	124.909	1.00	76.53	C
ATOM	7	CD1	LEU	A	32	-19.013	53.542	126.120	1.00	82.27	C
ATOM	8	CD2	LEU	A	32	-19.587	52.849	123.798	1.00	75.72	C
ATOM	9	N	ASP	A	33	-16.010	51.872	127.402	1.00	62.63	N
ATOM	10	CA	ASP	A	33	-15.833	50.609	128.110	1.00	66.42	C
ATOM	11	C	ASP	A	33	-17.078	49.732	128.061	1.00	66.28	C
ATOM	12	O	ASP	A	33	-17.847	49.662	129.010	1.00	70.72	O
ATOM	13	CB	ASP	A	33	-15.429	50.886	129.565	1.00	76.45	C
ATOM	14	CG	ASP	A	33	-15.213	49.613	130.376	1.00	89.48	C
ATOM	15	OD1	ASP	A	33	-16.204	48.914	130.682	1.00	92.42	O
ATOM	16	OD2	ASP	A	33	-14.045	49.310	130.710	1.00	101.27	O
ATOM	17	N	ASN	A	34	-17.268	49.065	126.934	1.00	63.97	N
ATOM	18	CA	ASN	A	34	-18.403	48.178	126.733	1.00	58.89	C
ATOM	19	C	ASN	A	34	-17.827	46.786	126.543	1.00	58.39	C
ATOM	20	O	ASN	A	34	-18.512	45.868	126.086	1.00	59.56	O
ATOM	21	CB	ASN	A	34	-19.157	48.579	125.474	1.00	50.46	C
ATOM	22	CG	ASN	A	34	-18.228	48.774	124.289	1.00	44.58	C
ATOM	23	OD1	ASN	A	34	-17.200	48.106	124.184	1.00	48.14	O
ATOM	24	ND2	ASN	A	34	-18.584	49.689	123.390	1.00	32.72	N
ATOM	25	N	GLY	A	35	-16.552	46.648	126.892	1.00	55.86	N
ATOM	26	CA	GLY	A	35	-15.885	45.374	126.748	1.00	53.67	C
ATOM	27	C	GLY	A	35	-15.709	45.048	125.278	1.00	52.92	C
ATOM	28	O	GLY	A	35	-15.539	43.886	124.908	1.00	57.86	O
ATOM	29	N	LEU	A	36	-15.758	46.071	124.430	1.00	47.94	N
ATOM	30	CA	LEU	A	36	-15.579	45.871	122.994	1.00	46.06	C
ATOM	31	C	LEU	A	36	-14.389	46.650	122.493	1.00	46.43	C
ATOM	32	O	LEU	A	36	-14.042	47.703	123.039	1.00	47.09	O
ATOM	33	CB	LEU	A	36	-16.812	46.304	122.206	1.00	51.34	C
ATOM	34	CG	LEU	A	36	-18.046	45.428	122.366	1.00	52.68	C
ATOM	35	CD1	LEU	A	36	-19.072	45.835	121.327	1.00	57.25	C
ATOM	36	CD2	LEU	A	36	-17.668	43.965	122.205	1.00	56.03	C
ATOM	37	N	ALA	A	37	-13.770	46.135	121.440	1.00	46.90	N
ATOM	38	CA	ALA	A	37	-12.610	46.789	120.883	1.00	49.14	C
ATOM	39	C	ALA	A	37	-11.562	46.863	121.973	1.00	49.54	C
ATOM	40	O	ALA	A	37	-11.079	47.946	122.303	1.00	48.93	O
ATOM	41	CB	ALA	A	37	-12.971	48.179	120.416	1.00	55.24	C
ATOM	42	N	ARG	A	38	-11.245	45.710	122.559	1.00	51.16	N
ATOM	43	CA	ARG	A	38	-10.220	45.658	123.598	1.00	58.37	C
ATOM	44	C	ARG	A	38	-8.943	45.500	122.802	1.00	54.73	C
ATOM	45	O	ARG	A	38	-7.864	45.256	123.342	1.00	61.96	O
ATOM	46	CB	ARG	A	38	-10.388	44.457	124.538	1.00	64.33	C
ATOM	47	CG	ARG	A	38	-11.755	44.326	125.213	1.00	66.46	C
ATOM	48	CD	ARG	A	38	-12.329	45.665	125.696	1.00	68.63	C
ATOM	49	NE	ARG	A	38	-11.542	46.310	126.743	1.00	65.38	N
ATOM	50	CZ	ARG	A	38	-11.845	47.494	127.264	1.00	70.22	C
ATOM	51	NH1	ARG	A	38	-12.915	48.153	126.835	1.00	66.18	N
ATOM	52	NH2	ARG	A	38	-11.078	48.025	128.205	1.00	76.54	N
ATOM	53	N	THR	A	39	-9.114	45.629	121.492	1.00	42.63	N
ATOM	54	CA	THR	A	39	-8.041	45.553	120.513	1.00	39.39	C
ATOM	55	C	THR	A	39	-8.555	46.298	119.290	1.00	38.04	C
ATOM	56	O	THR	A	39	-9.753	46.284	119.008	1.00	40.98	O
ATOM	57	CB	THR	A	39	-7.741	44.105	120.101	1.00	31.04	C
ATOM	58	OG1	THR	A	39	-8.932	43.513	119.570	1.00	43.60	O
ATOM	59	CG2	THR	A	39	-7.270	43.292	121.283	1.00	29.17	C
ATOM	60	N	PRO	A	40	-7.661	46.968	118.555	1.00	38.87	N
ATOM	61	CA	PRO	A	40	-8.115	47.696	117.367	1.00	38.65	C
ATOM	62	C	PRO	A	40	-9.048	46.806	116.520	1.00	36.72	C
ATOM	63	O	PRO	A	40	-8.684	45.685	116.166	1.00	50.49	O
ATOM	64	CB	PRO	A	40	-6.803	48.032	116.658	1.00	42.95	C
ATOM	65	CG	PRO	A	40	-5.827	48.173	117.806	1.00	44.34	C
ATOM	66	CD	PRO	A	40	-6.194	47.019	118.696	1.00	44.72	C
ATOM	67	N	THR	A	41	-10.254	47.294	116.219	1.00	30.56	N
ATOM	68	CA	THR	A	41	-11.235	46.536	115.417	1.00	22.13	C
ATOM	69	C	THR	A	41	-10.684	46.192	114.045	1.00	21.75	C
ATOM	70	O	THR	A	41	-10.020	47.020	113.423	1.00	17.46	O
ATOM	71	CB	THR	A	41	-12.506	47.347	115.152	1.00	18.74	C
ATOM	72	OG1	THR	A	41	-12.901	48.035	116.348	1.00	29.21	O

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ATOM     73  CG2 THR A  41     -13.626  46.428 114.666  1.00  3.31           C
ATOM     74  N   MET A  42     -10.967  44.987 113.561  1.00 27.61           N
ATOM     75  CA  MET A  42     -10.486  44.583 112.234  1.00 31.65           C
ATOM     76  C   MET A  42     -11.646  44.195 111.330  1.00 32.03           C
ATOM     77  O   MET A  42     -12.479  43.360 111.701  1.00 37.57           O
ATOM     78  CB  MET A  42      -9.539  43.396 112.342  1.00 37.02           C
ATOM     79  CG  MET A  42      -8.362  43.650 113.237  1.00 32.14           C
ATOM     80  SD  MET A  42      -7.217  42.289 113.180  1.00 27.50           S
ATOM     81  CE  MET A  42      -6.528  42.554 111.547  1.00 31.36           C
ATOM     82  N   GLY A  43     -11.696  44.795 110.144  1.00 19.78           N
ATOM     83  CA  GLY A  43     -12.767  44.491 109.215  1.00 24.08           C
ATOM     84  C   GLY A  43     -12.606  45.117 107.848  1.00 26.38           C
ATOM     85  O   GLY A  43     -11.502  45.467 107.434  1.00 35.82           O
ATOM     86  N   TRP A  44     -13.725  45.253 107.145  1.00 20.58           N
ATOM     87  CA  TRP A  44     -13.751  45.826 105.799  1.00 18.47           C
ATOM     88  C   TRP A  44     -14.863  46.862 105.710  1.00 19.26           C
ATOM     89  O   TRP A  44     -15.935  46.703 106.301  1.00 22.29           O
ATOM     90  CB  TRP A  44     -14.015  44.732 104.763  1.00 13.98           C
ATOM     91  CG  TRP A  44     -13.961  45.185 103.320  1.00 28.86           C
ATOM     92  CD1 TRP A  44     -12.841  45.329 102.547  1.00 43.13           C
ATOM     93  CD2 TRP A  44     -15.074  45.486 102.465  1.00 29.85           C
ATOM     94  NE1 TRP A  44     -13.186  45.690 101.265  1.00 44.22           N
ATOM     95  CE2 TRP A  44     -14.550  45.791 101.187  1.00 38.52           C
ATOM     96  CE3 TRP A  44     -16.461  45.524 102.653  1.00 19.33           C
ATOM     97  CZ2 TRP A  44     -15.367  46.124 100.102  1.00 39.43           C
ATOM     98  CZ3 TRP A  44     -17.274  45.856 101.576  1.00 28.01           C
ATOM     99  CH2 TRP A  44     -16.723  46.149 100.318  1.00 40.64           C
ATOM    100  N   LEU A  45     -14.609  47.916 104.951  1.00 15.68           N
ATOM    101  CA  LEU A  45     -15.583  48.970 104.806  1.00  8.20           C
ATOM    102  C   LEU A  45     -15.575  49.358 103.344  1.00  8.64           C
ATOM    103  O   LEU A  45     -14.552  49.728 102.779  1.00  5.90           O
ATOM    104  CB  LEU A  45     -15.198  50.158 105.694  1.00  3.31           C
ATOM    105  CG  LEU A  45     -16.294  51.156 106.050  1.00  5.81           C
ATOM    106  CD1 LEU A  45     -15.648  52.340 106.684  1.00 12.88           C
ATOM    107  CD2 LEU A  45     -17.052  51.601 104.820  1.00 21.03           C
ATOM    108  N   HIS A  46     -16.745  49.270 102.744  1.00  3.31           N
ATOM    109  CA  HIS A  46     -16.919  49.567 101.340  1.00 11.17           C
ATOM    110  C   HIS A  46     -16.579  50.976 100.856  1.00 21.93           C
ATOM    111  O   HIS A  46     -16.281  51.157  99.675  1.00 29.71           O
ATOM    112  CB  HIS A  46     -18.364  49.253 100.942  1.00 11.81           C
ATOM    113  CG  HIS A  46     -19.281  50.436 101.003  1.00 28.93           C
ATOM    114  ND1 HIS A  46     -19.351  51.374  99.996  1.00 35.79           N
ATOM    115  CD2 HIS A  46     -20.150  50.844 101.958  1.00 28.46           C
ATOM    116  CE1 HIS A  46     -20.224  52.309 100.328  1.00 32.31           C
ATOM    117  NE2 HIS A  46     -20.723  52.011 101.514  1.00 19.72           N
ATOM    118  N   TRP A  47     -16.598  51.973 101.733  1.00 19.43           N
ATOM    119  CA  TRP A  47     -16.373  53.343 101.260  1.00 18.18           C
ATOM    120  C   TRP A  47     -15.325  53.657 100.182  1.00 19.31           C
ATOM    121  O   TRP A  47     -15.664  53.759  99.003  1.00 17.77           O
ATOM    122  CB  TRP A  47     -16.176  54.326 102.419  1.00 23.78           C
ATOM    123  CG  TRP A  47     -16.419  55.731 101.936  1.00 38.36           C
ATOM    124  CD1 TRP A  47     -15.536  56.767 101.925  1.00 46.06           C
ATOM    125  CD2 TRP A  47     -17.605  56.208 101.287  1.00 40.43           C
ATOM    126  NE1 TRP A  47     -16.096  57.860 101.302  1.00 47.00           N
ATOM    127  CE2 TRP A  47     -17.367  57.540 100.901  1.00 44.04           C
ATOM    128  CE3 TRP A  47     -18.847  55.633 100.991  1.00 40.44           C
ATOM    129  CZ2 TRP A  47     -18.323  58.309 100.235  1.00 45.58           C
ATOM    130  CZ3 TRP A  47     -19.797  56.397 100.329  1.00 44.04           C
ATOM    131  CH2 TRP A  47     -19.528  57.721  99.958  1.00 42.42           C
ATOM    132  N   GLU A  48     -14.068  53.826 100.568  1.00 13.66           N
ATOM    133  CA  GLU A  48     -13.046  54.186  99.590  1.00  6.43           C
ATOM    134  C   GLU A  48     -13.071  53.427  98.260  1.00  5.74           C
ATOM    135  O   GLU A  48     -12.909  54.026  97.206  1.00  7.32           O
ATOM    136  CB  GLU A  48     -11.640  54.077 100.210  1.00  3.31           C
ATOM    137  CG  GLU A  48     -10.500  54.771  99.396  1.00 10.31           C
ATOM    138  CD  GLU A  48     -10.188  54.109  98.042  1.00 23.63           C
ATOM    139  OE1 GLU A  48      -9.778  52.930  98.018  1.00 28.74           O
ATOM    140  OE2 GLU A  48     -10.342  54.773  96.996  1.00 34.69           O
ATOM    141  N   ARG A  49     -13.279  52.119  98.302  1.00  9.77           N
ATOM    142  CA  ARG A  49     -13.258  51.319  97.085  1.00 18.71           C
ATOM    143  C   ARG A  49     -14.505  51.367  96.218  1.00 23.25           C
ATOM    144  O   ARG A  49     -14.441  51.101  95.016  1.00 23.40           O
ATOM    145  CB  ARG A  49     -12.947  49.865  97.440  1.00 28.83           C
ATOM    146  CG  ARG A  49     -12.685  48.983  96.244  1.00 33.89           C
ATOM    147  CD  ARG A  49     -11.610  49.585  95.354  1.00 50.93           C
ATOM    148  NE  ARG A  49     -11.077  48.596  94.424  1.00 62.30           N
ATOM    149  CZ  ARG A  49     -11.745  48.111  93.385  1.00 65.06           C
ATOM    150  NH1 ARG A  49     -12.977  48.537  93.130  1.00 53.20           N
ATOM    151  NH2 ARG A  49     -11.193  47.173  92.623  1.00 68.57           N
ATOM    152  N   PHE A  50     -15.633  51.721  96.819  1.00 18.53           N
ATOM    153  CA  PHE A  50     -16.885  51.752  96.083  1.00 19.91           C
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ATOM    154  C   PHE A  50     -17.715  53.015  96.252  1.00 25.78           C
ATOM    155  O   PHE A  50     -18.749  53.184  95.609  1.00 30.56           O
ATOM    156  CB  PHE A  50     -17.694  50.526  96.479  1.00  3.31           C
ATOM    157  CG  PHE A  50     -17.037  49.234  96.080  1.00  3.31           C
ATOM    158  CD1 PHE A  50     -17.210  48.700  94.796  1.00  7.11           C
ATOM    159  CD2 PHE A  50     -16.200  48.575  96.966  1.00  3.31           C
ATOM    160  CE1 PHE A  50     -16.553  47.530  94.414  1.00  3.31           C
ATOM    161  CE2 PHE A  50     -15.534  47.397  96.588  1.00  3.31           C
ATOM    162  CZ  PHE A  50     -15.714  46.877  95.309  1.00  3.31           C
ATOM    163  N   MET A  51     -17.256  53.908  97.113  1.00 30.81           N
ATOM    164  CA  MET A  51     -17.967  55.151  97.352  1.00 35.74           C
ATOM    165  C   MET A  51     -19.474  54.972  97.329  1.00 38.71           C
ATOM    166  O   MET A  51     -20.002  53.965  97.796  1.00 44.46           O
ATOM    167  CB  MET A  51     -17.583  56.181  96.310  1.00 32.16           C
ATOM    168  CG  MET A  51     -16.111  56.360  96.182  1.00 40.30           C
ATOM    169  SD  MET A  51     -15.828  57.763  95.156  1.00 60.82           S
ATOM    170  CE  MET A  51     -15.519  58.994  96.400  1.00 60.08           C
ATOM    171  N   CYS A  52     -20.162  55.956  96.766  1.00 43.24           N
ATOM    172  CA  CYS A  52     -21.611  55.932  96.714  1.00 50.44           C
ATOM    173  C   CYS A  52     -22.094  55.641  95.314  1.00 52.54           C
ATOM    174  O   CYS A  52     -22.673  56.497  94.651  1.00 51.59           O
ATOM    175  CB  CYS A  52     -22.162  57.276  97.189  1.00 53.51           C
ATOM    176  SG  CYS A  52     -23.982  57.393  97.340  1.00 59.52           S
ATOM    177  N   ASN A  53     -21.854  54.417  94.873  1.00 56.99           N
ATOM    178  CA  ASN A  53     -22.252  53.988  93.541  1.00 56.33           C
ATOM    179  C   ASN A  53     -23.663  53.399  93.537  1.00 54.88           C
ATOM    180  O   ASN A  53     -23.956  52.474  94.291  1.00 51.18           O
ATOM    181  CB  ASN A  53     -21.259  52.952  93.030  1.00 59.71           C
ATOM    182  CG  ASN A  53     -21.564  52.516  91.631  1.00 58.23           C
ATOM    183  OD1 ASN A  53     -22.670  52.053  91.342  1.00 59.65           O
ATOM    184  ND2 ASN A  53     -20.585  52.655  90.745  1.00 60.87           N
ATOM    185  N   LEU A  54     -24.532  53.913  92.675  1.00 57.17           N
ATOM    186  CA  LEU A  54     -25.901  53.418  92.637  1.00 61.04           C
ATOM    187  C   LEU A  54     -26.378  52.881  91.292  1.00 69.48           C
ATOM    188  O   LEU A  54     -27.422  52.226  91.220  1.00 71.14           O
ATOM    189  CB  LEU A  54     -26.859  54.518  93.084  1.00 52.43           C
ATOM    190  CG  LEU A  54     -26.705  55.089  94.490  1.00 47.83           C
ATOM    191  CD1 LEU A  54     -25.436  55.905  94.578  1.00 51.83           C
ATOM    192  CD2 LEU A  54     -27.904  55.958  94.805  1.00 44.94           C
ATOM    193  N   ASP A  55     -25.622  53.152  90.233  1.00 78.93           N
ATOM    194  CA  ASP A  55     -25.995  52.715  88.884  1.00 80.51           C
ATOM    195  C   ASP A  55     -25.857  51.206  88.701  1.00 76.75           C
ATOM    196  O   ASP A  55     -24.906  50.731  88.079  1.00 76.16           O
ATOM    197  CB  ASP A  55     -25.132  53.451  87.849  1.00 88.95           C
ATOM    198  CG  ASP A  55     -25.697  53.369  86.445  1.00 92.19           C
ATOM    199  OD1 ASP A  55     -25.060  53.916  85.523  1.00 96.75           O
ATOM    200  OD2 ASP A  55     -26.775  52.766  86.262  1.00 89.47           O
ATOM    201  N   CYS A  56     -26.815  50.456  89.230  1.00 76.43           N
ATOM    202  CA  CYS A  56     -26.774  49.010  89.130  1.00 83.63           C
ATOM    203  C   CYS A  56     -27.229  48.562  87.754  1.00 88.30           C
ATOM    204  O   CYS A  56     -27.532  47.395  87.521  1.00 90.15           O
ATOM    205  CB  CYS A  56     -27.630  48.416  90.242  1.00 87.27           C
ATOM    206  SG  CYS A  56     -27.190  49.183  91.844  1.00100.86           S
ATOM    207  N   GLN A  57     -27.244  49.512  86.833  1.00 95.89           N
ATOM    208  CA  GLN A  57     -27.620  49.239  85.460  1.00105.09           C
ATOM    209  C   GLN A  57     -26.373  48.907  84.654  1.00107.10           C
ATOM    210  O   GLN A  57     -26.143  47.750  84.300  1.00106.26           O
ATOM    211  CB  GLN A  57     -28.317  50.454  84.859  1.00111.37           C
ATOM    212  CG  GLN A  57     -29.779  50.532  85.205  1.00117.81           C
ATOM    213  CD  GLN A  57     -30.535  49.342  84.666  1.00121.76           C
ATOM    214  OE1 GLN A  57     -30.548  49.098  83.458  1.00121.05           O
ATOM    215  NE2 GLN A  57     -31.161  48.585  85.560  1.00120.88           N
ATOM    216  N   GLU A  58     -25.568  49.929  84.374  1.00107.44           N
ATOM    217  CA  GLU A  58     -24.341  49.763  83.602  1.00102.73           C
ATOM    218  C   GLU A  58     -23.168  49.325  84.469  1.00 92.49           C
ATOM    219  O   GLU A  58     -22.104  48.962  83.968  1.00 97.97           O
ATOM    220  CB  GLU A  58     -23.997  51.069  82.873  1.00106.42           C
ATOM    221  CG  GLU A  58     -24.926  51.375  81.703  1.00115.27           C
ATOM    222  CD  GLU A  58     -24.607  52.688  81.015  1.00121.83           C
ATOM    223  OE1 GLU A  58     -24.781  53.751  81.646  1.00127.79           O
ATOM    224  OE2 GLU A  58     -24.183  52.654  79.840  1.00126.24           O
ATOM    225  N   GLU A  59     -23.370  49.354  85.776  1.00 77.19           N
ATOM    226  CA  GLU A  59     -22.331  48.960  86.707  1.00 71.10           C
ATOM    227  C   GLU A  59     -23.000  48.298  87.890  1.00 64.71           C
ATOM    228  O   GLU A  59     -23.244  48.926  88.913  1.00 66.37           O
ATOM    229  CB  GLU A  59     -21.542  50.188  87.145  1.00 79.69           C
ATOM    230  CG  GLU A  59     -20.580  50.696  86.081  1.00 96.00           C
ATOM    231  CD  GLU A  59     -20.567  52.212  85.968  1.00106.06           C
ATOM    232  OE1 GLU A  59     -20.563  52.891  87.019  1.00111.91           O
ATOM    233  OE2 GLU A  59     -20.548  52.725  84.826  1.00111.15           O
ATOM    234  N   PRO A  60     -23.326  47.010  87.749  1.00 60.06           N
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ATOM    235  CA  PRO A  60     -23.982  46.169  88.754  1.00 63.63           C
ATOM    236  C   PRO A  60     -23.031  45.545  89.774  1.00 67.46           C
ATOM    237  O   PRO A  60     -23.459  45.035  90.819  1.00 63.91           O
ATOM    238  CB  PRO A  60     -24.661  45.112  87.903  1.00 62.40           C
ATOM    239  CG  PRO A  60     -23.633  44.894  86.838  1.00 56.39           C
ATOM    240  CD  PRO A  60     -23.238  46.303  86.459  1.00 58.46           C
ATOM    241  N   ASP A  61     -21.740  45.585  89.469  1.00 70.71           N
ATOM    242  CA  ASP A  61     -20.746  44.999  90.357  1.00 71.23           C
ATOM    243  C   ASP A  61     -20.074  45.989  91.298  1.00 65.01           C
ATOM    244  O   ASP A  61     -19.496  45.586  92.299  1.00 60.40           O
ATOM    245  CB  ASP A  61     -19.690  44.268  89.528  1.00 82.26           C
ATOM    246  CG  ASP A  61     -20.283  43.147  88.695  1.00 89.82           C
ATOM    247  OD1 ASP A  61     -20.865  42.211  89.288  1.00 86.48           O
ATOM    248  OD2 ASP A  61     -20.169  43.204  87.450  1.00 94.31           O
ATOM    249  N   SER A  62     -20.137  47.275  90.977  1.00 61.91           N
ATOM    250  CA  SER A  62     -19.533  48.294  91.825  1.00 55.96           C
ATOM    251  C   SER A  62     -20.657  48.915  92.641  1.00 48.78           C
ATOM    252  O   SER A  62     -20.439  49.606  93.629  1.00 48.50           O
ATOM    253  CB  SER A  62     -18.843  49.338  90.954  1.00 62.78           C
ATOM    254  OG  SER A  62     -17.958  48.701  90.047  1.00 64.54           O
ATOM    255  N   CYS A  63     -21.867  48.635  92.181  1.00 36.06           N
ATOM    256  CA  CYS A  63     -23.117  49.070  92.776  1.00 32.68           C
ATOM    257  C   CYS A  63     -23.243  48.574  94.216  1.00 26.28           C
ATOM    258  O   CYS A  63     -22.960  47.419  94.512  1.00 40.86           O
ATOM    259  CB  CYS A  63     -24.244  48.530  91.897  1.00 50.02           C
ATOM    260  SG  CYS A  63     -25.788  47.955  92.660  1.00 84.72           S
ATOM    261  N   ILE A  64     -23.669  49.460  95.108  1.00 17.87           N
ATOM    262  CA  ILE A  64     -23.841  49.138  96.518  1.00 16.03           C
ATOM    263  C   ILE A  64     -25.138  48.357  96.796  1.00 23.75           C
ATOM    264  O   ILE A  64     -26.206  48.950  96.977  1.00 26.05           O
ATOM    265  CB  ILE A  64     -23.856  50.427  97.358  1.00 11.27           C
ATOM    266  CG1 ILE A  64     -22.539  51.180  97.179  1.00 15.20           C
ATOM    267  CG2 ILE A  64     -24.095  50.090  98.813  1.00 14.96           C
ATOM    268  CD1 ILE A  64     -22.486  52.490  97.923  1.00 33.05           C
ATOM    269  N   SER A  65     -25.038  47.029  96.852  1.00 29.07           N
ATOM    270  CA  SER A  65     -26.207  46.182  97.095  1.00 35.48           C
ATOM    271  C   SER A  65     -25.910  44.988  97.987  1.00 39.53           C
ATOM    272  O   SER A  65     -24.763  44.549  98.102  1.00 46.31           O
ATOM    273  CB  SER A  65     -26.725  45.623  95.786  1.00 42.49           C
ATOM    274  OG  SER A  65     -26.003  44.448  95.475  1.00 57.55           O
ATOM    275  N   GLU A  66     -26.964  44.432  98.579  1.00 46.25           N
ATOM    276  CA  GLU A  66     -26.808  43.265  99.442  1.00 51.68           C
ATOM    277  C   GLU A  66     -26.093  42.193  98.639  1.00 49.33           C
ATOM    278  O   GLU A  66     -25.391  41.340  99.185  1.00 48.58           O
ATOM    279  CB  GLU A  66     -28.172  42.753  99.939  1.00 52.13           C
ATOM    280  CG  GLU A  66     -29.251  42.627  98.884  1.00 60.06           C
ATOM    281  CD  GLU A  66     -30.427  41.805  99.368  1.00 66.09           C
ATOM    282  OE1 GLU A  66     -30.263  40.579  99.520  1.00 60.99           O
ATOM    283  OE2 GLU A  66     -31.510  42.378  99.611  1.00 70.88           O
ATOM    284  N   LYS A  67     -26.263  42.263  97.325  1.00 50.35           N
ATOM    285  CA  LYS A  67     -25.616  41.319  96.441  1.00 59.16           C
ATOM    286  C   LYS A  67     -24.120  41.573  96.569  1.00 50.62           C
ATOM    287  O   LYS A  67     -23.341  40.637  96.721  1.00 57.82           O
ATOM    288  CB  LYS A  67     -26.108  41.524  95.007  1.00 76.41           C
ATOM    289  CG  LYS A  67     -27.591  41.155  94.806  1.00 93.54           C
ATOM    290  CD  LYS A  67     -28.450  42.296  94.217  1.00102.67           C
ATOM    291  CE  LYS A  67     -27.959  42.782  92.844  1.00103.90           C
ATOM    292  NZ  LYS A  67     -27.807  41.690  91.845  1.00 98.42           N
ATOM    293  N   LEU A  68     -23.719  42.839  96.543  1.00 41.00           N
ATOM    294  CA  LEU A  68     -22.304  43.169  96.681  1.00 35.92           C
ATOM    295  C   LEU A  68     -21.710  42.564  97.957  1.00 28.69           C
ATOM    296  O   LEU A  68     -20.907  41.628  97.913  1.00 30.00           O
ATOM    297  CB  LEU A  68     -22.109  44.691  96.683  1.00 37.88           C
ATOM    298  CG  LEU A  68     -20.742  45.295  97.056  1.00 30.06           C
ATOM    299  CD1 LEU A  68     -19.593  44.472  96.493  1.00 32.82           C
ATOM    300  CD2 LEU A  68     -20.684  46.722  96.528  1.00 35.84           C
ATOM    301  N   PHE A  69     -22.105  43.100  99.099  1.00 21.07           N
ATOM    302  CA  PHE A  69     -21.599  42.597 100.374  1.00 29.31           C
ATOM    303  C   PHE A  69     -21.635  41.071 100.464  1.00 35.20           C
ATOM    304  O   PHE A  69     -20.617  40.426 100.731  1.00 35.73           O
ATOM    305  CB  PHE A  69     -22.413  43.197 101.519  1.00 26.29           C
ATOM    306  CG  PHE A  69     -22.200  44.675 101.698  1.00 26.15           C
ATOM    307  CD1 PHE A  69     -21.182  45.145 102.522  1.00 24.44           C
ATOM    308  CD2 PHE A  69     -23.007  45.599 101.032  1.00 28.73           C
ATOM    309  CE1 PHE A  69     -20.973  46.512 102.682  1.00 27.34           C
ATOM    310  CE2 PHE A  69     -22.804  46.965 101.187  1.00 23.88           C
ATOM    311  CZ  PHE A  69     -21.786  47.423 102.015  1.00 25.71           C
ATOM    312  N   MET A  70     -22.825  40.516 100.240  1.00 43.20           N
ATOM    313  CA  MET A  70     -23.073  39.078 100.287  1.00 47.28           C
ATOM    314  C   MET A  70     -21.931  38.329  99.626  1.00 46.42           C
ATOM    315  O   MET A  70     -21.475  37.287 100.107  1.00 49.69           O
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ATOM    316  CB  MET A  70     -24.379  38.755  99.563  1.00 43.22           C
ATOM    317  CG  MET A  70     -24.925  37.381  99.864  1.00 46.78           C
ATOM    318  SD  MET A  70     -26.352  36.950  98.839  1.00 70.05           S
ATOM    319  CE  MET A  70     -27.493  38.341  99.190  1.00 58.66           C
ATOM    320  N   GLU A  71     -21.479  38.872  98.505  1.00 43.02           N
ATOM    321  CA  GLU A  71     -20.379  38.282  97.768  1.00 43.81           C
ATOM    322  C   GLU A  71     -19.153  38.421  98.664  1.00 42.37           C
ATOM    323  O   GLU A  71     -18.559  37.431  99.095  1.00 46.48           O
ATOM    324  CB  GLU A  71     -20.185  39.040  96.454  1.00 52.02           C
ATOM    325  CG  GLU A  71     -19.343  38.314  95.414  1.00 61.53           C
ATOM    326  CD  GLU A  71     -19.348  39.006  94.047  1.00 67.25           C
ATOM    327  OE1 GLU A  71     -18.665  38.503  93.127  1.00 69.17           O
ATOM    328  OE2 GLU A  71     -20.034  40.045  93.889  1.00 60.67           O
ATOM    329  N   MET A  72     -18.799  39.666  98.952  1.00 39.30           N
ATOM    330  CA  MET A  72     -17.669  39.969  99.807  1.00 40.60           C
ATOM    331  C   MET A  72     -17.607  39.067 101.042  1.00 47.07           C
ATOM    332  O   MET A  72     -16.578  38.441 101.298  1.00 47.00           O
ATOM    333  CB  MET A  72     -17.747  41.430 100.226  1.00 37.04           C
ATOM    334  CG  MET A  72     -17.390  42.385  99.113  1.00 20.85           C
ATOM    335  SD  MET A  72     -15.643  42.198  98.762  1.00 34.40           S
ATOM    336  CE  MET A  72     -15.552  42.658  97.119  1.00  3.31           C
ATOM    337  N   ALA A  73     -18.704  39.004 101.799  1.00 51.91           N
ATOM    338  CA  ALA A  73     -18.796  38.175 103.008  1.00 50.87           C
ATOM    339  C   ALA A  73     -18.268  36.767 102.760  1.00 47.48           C
ATOM    340  O   ALA A  73     -17.482  36.222 103.541  1.00 36.90           O
ATOM    341  CB  ALA A  73     -20.237  38.098 103.464  1.00 61.96           C
ATOM    342  N   GLU A  74     -18.740  36.181 101.666  1.00 48.41           N
ATOM    343  CA  GLU A  74     -18.331  34.851 101.257  1.00 50.32           C
ATOM    344  C   GLU A  74     -16.810  34.785 101.268  1.00 44.48           C
ATOM    345  O   GLU A  74     -16.215  33.957 101.959  1.00 35.80           O
ATOM    346  CB  GLU A  74     -18.844  34.572  99.841  1.00 64.11           C
ATOM    347  CG  GLU A  74     -19.454  33.198  99.656  1.00 88.13           C
ATOM    348  CD  GLU A  74     -18.490  32.075  99.998  1.00104.29           C
ATOM    349  OE1 GLU A  74     -17.493  31.893  99.263  1.00112.61           O
ATOM    350  OE2 GLU A  74     -18.733  31.376 101.008  1.00111.41           O
ATOM    351  N   LEU A  75     -16.203  35.687 100.502  1.00 44.39           N
ATOM    352  CA  LEU A  75     -14.754  35.784 100.355  1.00 43.26           C
ATOM    353  C   LEU A  75     -13.938  35.894 101.631  1.00 39.65           C
ATOM    354  O   LEU A  75     -13.046  35.081 101.861  1.00 42.63           O
ATOM    355  CB  LEU A  75     -14.402  36.965  99.464  1.00 47.71           C
ATOM    356  CG  LEU A  75     -14.719  36.813  97.981  1.00 56.06           C
ATOM    357  CD1 LEU A  75     -16.201  36.526  97.782  1.00 66.62           C
ATOM    358  CD2 LEU A  75     -14.308  38.085  97.255  1.00 64.54           C
ATOM    359  N   MET A  76     -14.212  36.911 102.441  1.00 34.46           N
ATOM    360  CA  MET A  76     -13.474  37.082 103.685  1.00 32.44           C
ATOM    361  C   MET A  76     -13.219  35.721 104.305  1.00 37.52           C
ATOM    362  O   MET A  76     -12.145  35.464 104.851  1.00 44.32           O
ATOM    363  CB  MET A  76     -14.260  37.954 104.653  1.00 28.67           C
ATOM    364  CG  MET A  76     -14.383  39.378 104.182  1.00 27.61           C
ATOM    365  SD  MET A  76     -15.332  40.382 105.305  1.00 43.61           S
ATOM    366  CE  MET A  76     -14.098  40.677 106.578  1.00 48.42           C
ATOM    367  N   VAL A  77     -14.220  34.853 104.196  1.00 41.86           N
ATOM    368  CA  VAL A  77     -14.145  33.495 104.706  1.00 42.36           C
ATOM    369  C   VAL A  77     -13.260  32.629 103.799  1.00 39.82           C
ATOM    370  O   VAL A  77     -12.404  31.885 104.283  1.00 38.89           O
ATOM    371  CB  VAL A  77     -15.545  32.869 104.764  1.00 41.56           C
ATOM    372  CG1 VAL A  77     -15.466  31.501 105.407  1.00 43.46           C
ATOM    373  CG2 VAL A  77     -16.499  33.776 105.531  1.00 45.91           C
ATOM    374  N   SER A  78     -13.476  32.750 102.489  1.00 36.14           N
ATOM    375  CA  SER A  78     -12.734  32.010 101.476  1.00 42.45           C
ATOM    376  C   SER A  78     -11.227  32.115 101.584  1.00 46.34           C
ATOM    377  O   SER A  78     -10.578  31.218 102.117  1.00 54.34           O
ATOM    378  CB  SER A  78     -13.152  32.462 100.077  1.00 47.24           C
ATOM    379  OG  SER A  78     -14.527  32.205  99.847  1.00 62.25           O
ATOM    380  N   GLU A  79     -10.660  33.196 101.059  1.00 48.13           N
ATOM    381  CA  GLU A  79      -9.207  33.385 101.098  1.00 49.45           C
ATOM    382  C   GLU A  79      -8.654  33.641 102.504  1.00 47.50           C
ATOM    383  O   GLU A  79      -7.646  34.328 102.681  1.00 44.99           O
ATOM    384  CB  GLU A  79      -8.795  34.554 100.201  1.00 51.38           C
ATOM    385  CG  GLU A  79      -9.060  34.326  98.722  1.00 58.71           C
ATOM    386  CD  GLU A  79      -8.227  33.197  98.148  1.00 60.00           C
ATOM    387  OE1 GLU A  79      -7.038  33.090  98.515  1.00 66.35           O
ATOM    388  OE2 GLU A  79      -8.763  32.419  97.332  1.00 54.42           O
ATOM    389  N   GLY A  80      -9.325  33.071 103.498  1.00 48.14           N
ATOM    390  CA  GLY A  80      -8.893  33.188 104.876  1.00 48.70           C
ATOM    391  C   GLY A  80      -8.650  34.557 105.470  1.00 46.09           C
ATOM    392  O   GLY A  80      -7.648  34.760 106.153  1.00 47.24           O
ATOM    393  N   TRP A  81      -9.543  35.504 105.214  1.00 41.67           N
ATOM    394  CA  TRP A  81      -9.399  36.836 105.796  1.00 34.07           C
ATOM    395  C   TRP A  81      -9.847  36.737 107.248  1.00 33.67           C
ATOM    396  O   TRP A  81      -9.191  37.240 108.160  1.00 32.32           O
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ATOM    397  CB  TRP A  81     -10.279  37.847 105.056  1.00 18.60           C
ATOM    398  CG  TRP A  81      -9.763  38.170 103.718  1.00 20.67           C
ATOM    399  CD1 TRP A  81     -10.200  37.669 102.522  1.00 35.06           C
ATOM    400  CD2 TRP A  81      -8.659  39.035 103.416  1.00 23.59           C
ATOM    401  NE1 TRP A  81      -9.434  38.170 101.489  1.00 37.21           N
ATOM    402  CE2 TRP A  81      -8.483  39.011 102.011  1.00 31.74           C
ATOM    403  CE3 TRP A  81      -7.800  39.828 104.197  1.00 25.29           C
ATOM    404  CZ2 TRP A  81      -7.480  39.750 101.370  1.00 38.96           C
ATOM    405  CZ3 TRP A  81      -6.805  40.561 103.562  1.00 27.92           C
ATOM    406  CH2 TRP A  81      -6.654  40.517 102.160  1.00 35.85           C
ATOM    407  N   LYS A  82     -10.973  36.066 107.446  1.00 29.50           N
ATOM    408  CA  LYS A  82     -11.523  35.887 108.769  1.00 25.97           C
ATOM    409  C   LYS A  82     -10.447  35.315 109.671  1.00 31.15           C
ATOM    410  O   LYS A  82     -10.174  35.859 110.734  1.00 15.81           O
ATOM    411  CB  LYS A  82     -12.719  34.947 108.700  1.00 29.74           C
ATOM    412  CG  LYS A  82     -13.480  34.802 110.000  1.00 24.33           C
ATOM    413  CD  LYS A  82     -14.800  34.104 109.755  1.00 24.58           C
ATOM    414  CE  LYS A  82     -15.483  33.751 111.052  1.00 35.92           C
ATOM    415  NZ  LYS A  82     -14.597  32.898 111.886  1.00 45.25           N
ATOM    416  N   ASP A  83      -9.824  34.231 109.218  1.00 45.47           N
ATOM    417  CA  ASP A  83      -8.767  33.550 109.967  1.00 58.09           C
ATOM    418  C   ASP A  83      -7.665  34.490 110.441  1.00 56.61           C
ATOM    419  O   ASP A  83      -7.115  34.320 111.530  1.00 59.34           O
ATOM    420  CB  ASP A  83      -8.128  32.452 109.104  1.00 67.45           C
ATOM    421  CG  ASP A  83      -9.122  31.372 108.679  1.00 76.98           C
ATOM    422  OD1 ASP A  83      -8.792  30.616 107.737  1.00 83.43           O
ATOM    423  OD2 ASP A  83     -10.218  31.272 109.283  1.00 74.14           O
ATOM    424  N   ALA A  84      -7.336  35.473 109.610  1.00 51.70           N
ATOM    425  CA  ALA A  84      -6.280  36.423 109.937  1.00 46.56           C
ATOM    426  C   ALA A  84      -6.711  37.464 110.964  1.00 45.48           C
ATOM    427  O   ALA A  84      -5.875  38.059 111.629  1.00 38.08           O
ATOM    428  CB  ALA A  84      -5.783  37.107 108.664  1.00 50.31           C
ATOM    429  N   GLY A  85      -8.013  37.690 111.095  1.00 45.96           N
ATOM    430  CA  GLY A  85      -8.478  38.666 112.069  1.00 49.30           C
ATOM    431  C   GLY A  85      -9.677  39.515 111.673  1.00 45.07           C
ATOM    432  O   GLY A  85     -10.546  39.805 112.504  1.00 39.93           O
ATOM    433  N   TYR A  86      -9.723  39.935 110.412  1.00 44.82           N
ATOM    434  CA  TYR A  86     -10.827  40.757 109.937  1.00 41.82           C
ATOM    435  C   TYR A  86     -12.082  39.964 110.200  1.00 41.30           C
ATOM    436  O   TYR A  86     -12.242  38.860 109.697  1.00 41.51           O
ATOM    437  CB  TYR A  86     -10.655  41.047 108.453  1.00 37.34           C
ATOM    438  CG  TYR A  86      -9.314  41.665 108.163  1.00 38.89           C
ATOM    439  CD1 TYR A  86      -9.104  43.030 108.314  1.00 45.61           C
ATOM    440  CD2 TYR A  86      -8.230  40.870 107.815  1.00 35.97           C
ATOM    441  CE1 TYR A  86      -7.841  43.585 108.127  1.00 46.91           C
ATOM    442  CE2 TYR A  86      -6.965  41.413 107.630  1.00 39.36           C
ATOM    443  CZ  TYR A  86      -6.776  42.767 107.786  1.00 45.40           C
ATOM    444  OH  TYR A  86      -5.521  43.297 107.606  1.00 46.34           O
ATOM    445  N   GLU A  87     -12.964  40.526 111.011  1.00 39.34           N
ATOM    446  CA  GLU A  87     -14.183  39.836 111.369  1.00 40.09           C
ATOM    447  C   GLU A  87     -15.422  40.699 111.219  1.00 32.92           C
ATOM    448  O   GLU A  87     -16.548  40.221 111.374  1.00 37.99           O
ATOM    449  CB  GLU A  87     -14.041  39.339 112.799  1.00 52.92           C
ATOM    450  CG  GLU A  87     -15.316  38.889 113.460  1.00 76.75           C
ATOM    451  CD  GLU A  87     -15.068  38.461 114.891  1.00 93.47           C
ATOM    452  OE1 GLU A  87     -14.373  39.206 115.617  1.00100.50           O
ATOM    453  OE2 GLU A  87     -15.564  37.387 115.294  1.00100.39           O
ATOM    454  N   TYR A  88     -15.211  41.968 110.896  1.00 29.14           N
ATOM    455  CA  TYR A  88     -16.313  42.908 110.724  1.00 30.69           C
ATOM    456  C   TYR A  88     -16.482  43.390 109.285  1.00 32.71           C
ATOM    457  O   TYR A  88     -15.559  43.949 108.682  1.00 34.05           O
ATOM    458  CB  TYR A  88     -16.109  44.119 111.631  1.00 20.03           C
ATOM    459  CG  TYR A  88     -16.466  43.888 113.081  1.00 20.03           C
ATOM    460  CD1 TYR A  88     -17.761  44.135 113.549  1.00 18.12           C
ATOM    461  CD2 TYR A  88     -15.516  43.443 113.985  1.00 19.14           C
ATOM    462  CE1 TYR A  88     -18.096  43.952 114.875  1.00 19.29           C
ATOM    463  CE2 TYR A  88     -15.843  43.254 115.321  1.00 26.80           C
ATOM    464  CZ  TYR A  88     -17.132  43.513 115.759  1.00 26.99           C
ATOM    465  OH  TYR A  88     -17.448  43.352 117.088  1.00 28.89           O
ATOM    466  N   LEU A  89     -17.674  43.170 108.741  1.00 33.86           N
ATOM    467  CA  LEU A  89     -18.009  43.596 107.381  1.00 33.30           C
ATOM    468  C   LEU A  89     -18.995  44.750 107.578  1.00 33.86           C
ATOM    469  O   LEU A  89     -20.084  44.563 108.146  1.00 30.96           O
ATOM    470  CB  LEU A  89     -18.659  42.438 106.619  1.00 28.47           C
ATOM    471  CG  LEU A  89     -19.039  42.609 105.153  1.00 39.91           C
ATOM    472  CD1 LEU A  89     -17.858  43.148 104.383  1.00 59.81           C
ATOM    473  CD2 LEU A  89     -19.474  41.267 104.587  1.00 48.59           C
ATOM    474  N   CYS A  90     -18.622  45.942 107.121  1.00 31.85           N
ATOM    475  CA  CYS A  90     -19.479  47.092 107.340  1.00 33.23           C
ATOM    476  C   CYS A  90     -19.899  47.915 106.156  1.00 36.85           C
ATOM    477  O   CYS A  90     -19.133  48.143 105.222  1.00 40.56           O
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ATOM    478  CB  CYS A  90     -18.823  47.994 108.362  1.00 32.78           C
ATOM    479  SG  CYS A  90     -18.214  47.010 109.726  1.00 46.36           S
ATOM    480  N   ILE A  91     -21.140  48.374 106.244  1.00 40.65           N
ATOM    481  CA  ILE A  91     -21.754  49.193 105.223  1.00 38.29           C
ATOM    482  C   ILE A  91     -21.589  50.643 105.610  1.00 39.61           C
ATOM    483  O   ILE A  91     -21.740  51.013 106.774  1.00 41.42           O
ATOM    484  CB  ILE A  91     -23.256  48.938 105.120  1.00 36.59           C
ATOM    485  CG1 ILE A  91     -23.530  47.449 104.971  1.00 40.49           C
ATOM    486  CG2 ILE A  91     -23.824  49.701 103.943  1.00 32.88           C
ATOM    487  CD1 ILE A  91     -24.996  47.109 105.012  1.00 49.06           C
ATOM    488  N   ASP A  92     -21.284  51.461 104.616  1.00 38.83           N
ATOM    489  CA  ASP A  92     -21.113  52.879 104.831  1.00 41.57           C
ATOM    490  C   ASP A  92     -22.311  53.587 104.201  1.00 41.21           C
ATOM    491  O   ASP A  92     -23.258  52.934 103.768  1.00 49.28           O
ATOM    492  CB  ASP A  92     -19.796  53.343 104.207  1.00 42.41           C
ATOM    493  CG  ASP A  92     -19.438  54.766 104.596  1.00 43.83           C
ATOM    494  OD1 ASP A  92     -19.865  55.691 103.865  1.00 51.06           O
ATOM    495  OD2 ASP A  92     -18.750  54.950 105.637  1.00 19.32           O
ATOM    496  N   ASP A  93     -22.266  54.912 104.154  1.00 38.07           N
ATOM    497  CA  ASP A  93     -23.345  55.718 103.600  1.00 37.38           C
ATOM    498  C   ASP A  93     -23.908  55.187 102.283  1.00 33.12           C
ATOM    499  O   ASP A  93     -23.263  54.396 101.577  1.00 23.80           O
ATOM    500  CB  ASP A  93     -22.847  57.142 103.381  1.00 40.75           C
ATOM    501  CG  ASP A  93     -23.949  58.159 103.486  1.00 40.94           C
ATOM    502  OD1 ASP A  93     -25.098  57.826 103.122  1.00 46.78           O
ATOM    503  OD2 ASP A  93     -23.668  59.293 103.930  1.00 44.21           O
ATOM    504  N   CYS A  94     -25.128  55.613 101.967  1.00 31.07           N
ATOM    505  CA  CYS A  94     -25.773  55.230 100.714  1.00 33.68           C
ATOM    506  C   CYS A  94     -26.370  53.830 100.663  1.00 29.32           C
ATOM    507  O   CYS A  94     -26.602  53.281  99.595  1.00 33.63           O
ATOM    508  CB  CYS A  94     -24.777  55.426  99.564  1.00 32.58           C
ATOM    509  SG  CYS A  94     -24.368  57.192  99.335  1.00 56.68           S
ATOM    510  N   TRP A  95     -26.644  53.261 101.821  1.00 24.27           N
ATOM    511  CA  TRP A  95     -27.224  51.929 101.891  1.00 30.02           C
ATOM    512  C   TRP A  95     -28.720  52.075 102.131  1.00 43.86           C
ATOM    513  O   TRP A  95     -29.482  51.111 101.986  1.00 45.97           O
ATOM    514  CB  TRP A  95     -26.646  51.167 103.082  1.00 31.37           C
ATOM    515  CG  TRP A  95     -27.041  51.785 104.400  1.00 31.21           C
ATOM    516  CD1 TRP A  95     -26.362  52.752 105.091  1.00 35.75           C
ATOM    517  CD2 TRP A  95     -28.234  51.520 105.152  1.00 30.42           C
ATOM    518  NE1 TRP A  95     -27.058  53.106 106.224  1.00 33.13           N
ATOM    519  CE2 TRP A  95     -28.212  52.369 106.284  1.00 34.20           C
ATOM    520  CE3 TRP A  95     -29.325  50.657 104.975  1.00 38.45           C
ATOM    521  CZ2 TRP A  95     -29.232  52.369 107.242  1.00 41.21           C
ATOM    522  CZ3 TRP A  95     -30.344  50.661 105.934  1.00 46.80           C
ATOM    523  CH2 TRP A  95     -30.288  51.515 107.047  1.00 47.81           C
ATOM    524  N   MET A  96     -29.126  53.279 102.524  1.00 56.48           N
ATOM    525  CA  MET A  96     -30.514  53.544 102.853  1.00 60.38           C
ATOM    526  C   MET A  96     -31.398  54.078 101.742  1.00 59.84           C
ATOM    527  O   MET A  96     -30.953  54.774 100.828  1.00 53.40           O
ATOM    528  CB  MET A  96     -30.574  54.498 104.049  1.00 61.17           C
ATOM    529  CG  MET A  96     -29.632  55.693 103.933  1.00 60.98           C
ATOM    530  SD  MET A  96     -29.696  56.754 105.387  1.00 57.31           S
ATOM    531  CE  MET A  96     -29.014  55.691 106.626  1.00 49.16           C
ATOM    532  N   ALA A  97     -32.671  53.725 101.839  1.00 59.61           N
ATOM    533  CA  ALA A  97     -33.664  54.198 100.903  1.00 57.58           C
ATOM    534  C   ALA A  97     -33.879  55.656 101.316  1.00 58.35           C
ATOM    535  O   ALA A  97     -33.478  56.067 102.405  1.00 63.58           O
ATOM    536  CB  ALA A  97     -34.935  53.409 101.058  1.00 59.55           C
ATOM    537  N   PRO A  98     -34.501  56.457 100.446  1.00 57.40           N
ATOM    538  CA  PRO A  98     -34.811  57.880 100.607  1.00 57.23           C
ATOM    539  C   PRO A  98     -35.465  58.376 101.881  1.00 61.14           C
ATOM    540  O   PRO A  98     -35.261  59.528 102.252  1.00 62.28           O
ATOM    541  CB  PRO A  98     -35.651  58.174  99.389  1.00 60.63           C
ATOM    542  CG  PRO A  98     -34.989  57.331  98.364  1.00 68.69           C
ATOM    543  CD  PRO A  98     -34.859  56.015  99.092  1.00 59.58           C
ATOM    544  N   GLN A  99     -36.275  57.551 102.535  1.00 68.09           N
ATOM    545  CA  GLN A  99     -36.894  57.990 103.784  1.00 73.61           C
ATOM    546  C   GLN A  99     -37.551  56.923 104.630  1.00 75.40           C
ATOM    547  O   GLN A  99     -37.772  55.790 104.201  1.00 80.81           O
ATOM    548  CB  GLN A  99     -37.910  59.118 103.550  1.00 80.34           C
ATOM    549  CG  GLN A  99     -39.168  58.723 102.815  1.00 89.00           C
ATOM    550  CD  GLN A  99     -38.941  58.557 101.330  1.00 91.93           C
ATOM    551  OE1 GLN A  99     -38.264  57.625 100.890  1.00 92.41           O
ATOM    552  NE2 GLN A  99     -39.498  59.473 100.545  1.00 89.50           N
ATOM    553  N   ARG A 100     -37.851  57.345 105.851  1.00 75.98           N
ATOM    554  CA  ARG A 100     -38.464  56.537 106.885  1.00 80.55           C
ATOM    555  C   ARG A 100     -39.716  55.842 106.399  1.00 82.57           C
ATOM    556  O   ARG A 100     -40.319  56.259 105.414  1.00 80.59           O
ATOM    557  CB  ARG A 100     -38.823  57.435 108.069  1.00 80.70           C
ATOM    558  CG  ARG A 100     -37.709  58.391 108.501  1.00 75.07           C
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ATOM    559  CD  ARG A 100     -36.739  57.726 109.462  1.00 64.10           C
ATOM    560  NE  ARG A 100     -35.661  58.621 109.876  1.00 52.24           N
ATOM    561  CZ  ARG A 100     -34.704  58.281 110.733  1.00 47.35           C
ATOM    562  NH1 ARG A 100     -34.693  57.066 111.271  1.00 40.85           N
ATOM    563  NH2 ARG A 100     -33.751  59.149 111.039  1.00 47.99           N
ATOM    564  N   ASP A 101     -40.101  54.780 107.103  1.00 86.12           N
ATOM    565  CA  ASP A 101     -41.307  54.038 106.760  1.00 92.31           C
ATOM    566  C   ASP A 101     -42.496  54.603 107.536  1.00 98.60           C
ATOM    567  O   ASP A 101     -42.369  55.594 108.268  1.00 92.38           O
ATOM    568  CB  ASP A 101     -41.144  52.510 107.023  1.00 88.34           C
ATOM    569  CG  ASP A 101     -40.924  52.151 108.502  1.00 78.93           C
ATOM    570  OD1 ASP A 101     -41.624  52.699 109.372  1.00 78.59           O
ATOM    571  OD2 ASP A 101     -40.062  51.292 108.791  1.00 69.58           O
ATOM    572  N   SER A 102     -43.657  53.987 107.347  1.00106.35           N
ATOM    573  CA  SER A 102     -44.866  54.419 108.030  1.00106.95           C
ATOM    574  C   SER A 102     -44.581  54.527 109.520  1.00105.57           C
ATOM    575  O   SER A 102     -45.012  55.473 110.180  1.00103.49           O
ATOM    576  CB  SER A 102     -45.991  53.415 107.772  1.00106.67           C
ATOM    577  OG  SER A 102     -45.534  52.081 107.928  1.00 97.92           O
ATOM    578  N   GLU A 103     -43.834  53.550 110.029  1.00104.74           N
ATOM    579  CA  GLU A 103     -43.456  53.484 111.437  1.00105.44           C
ATOM    580  C   GLU A 103     -42.482  54.602 111.787  1.00 99.30           C
ATOM    581  O   GLU A 103     -42.400  55.025 112.936  1.00 97.60           O
ATOM    582  CB  GLU A 103     -42.808  52.129 111.733  1.00120.87           C
ATOM    583  CG  GLU A 103     -42.725  51.763 113.207  1.00138.34           C
ATOM    584  CD  GLU A 103     -44.085  51.428 113.796  1.00149.87           C
ATOM    585  OE1 GLU A 103     -44.777  50.556 113.228  1.00156.42           O
ATOM    586  OE2 GLU A 103     -44.461  52.022 114.830  1.00153.81           O
ATOM    587  N   GLY A 104     -41.730  55.073 110.799  1.00 93.42           N
ATOM    588  CA  GLY A 104     -40.790  56.153 111.053  1.00 86.33           C
ATOM    589  C   GLY A 104     -39.355  55.715 111.299  1.00 80.52           C
ATOM    590  O   GLY A 104     -38.530  56.511 111.741  1.00 76.38           O
ATOM    591  N   ARG A 105     -39.055  54.451 111.023  1.00 74.97           N
ATOM    592  CA  ARG A 105     -37.701  53.942 111.194  1.00 66.50           C
ATOM    593  C   ARG A 105     -37.060  53.991 109.821  1.00 62.55           C
ATOM    594  O   ARG A 105     -37.726  54.286 108.827  1.00 61.70           O
ATOM    595  CB  ARG A 105     -37.728  52.500 111.665  1.00 67.28           C
ATOM    596  CG  ARG A 105     -38.680  52.241 112.790  1.00 71.50           C
ATOM    597  CD  ARG A 105     -38.708  50.774 113.114  1.00 81.08           C
ATOM    598  NE  ARG A 105     -39.129  50.549 114.489  1.00101.63           N
ATOM    599  CZ  ARG A 105     -39.140  49.361 115.086  1.00112.71           C
ATOM    600  NH1 ARG A 105     -38.755  48.275 114.427  1.00117.25           N
ATOM    601  NH2 ARG A 105     -39.529  49.259 116.350  1.00120.85           N
ATOM    602  N   LEU A 106     -35.774  53.694 109.743  1.00 57.99           N
ATOM    603  CA  LEU A 106     -35.119  53.714 108.449  1.00 53.74           C
ATOM    604  C   LEU A 106     -35.525  52.519 107.615  1.00 52.72           C
ATOM    605  O   LEU A 106     -36.427  51.768 107.966  1.00 59.39           O
ATOM    606  CB  LEU A 106     -33.618  53.720 108.642  1.00 49.89           C
ATOM    607  CG  LEU A 106     -33.326  54.877 109.573  1.00 53.87           C
ATOM    608  CD1 LEU A 106     -32.012  54.646 110.288  1.00 56.85           C
ATOM    609  CD2 LEU A 106     -33.332  56.182 108.782  1.00 65.81           C
ATOM    610  N   GLN A 107     -34.838  52.353 106.500  1.00 49.03           N
ATOM    611  CA  GLN A 107     -35.108  51.257 105.601  1.00 50.68           C
ATOM    612  C   GLN A 107     -34.066  51.330 104.529  1.00 47.10           C
ATOM    613  O   GLN A 107     -33.730  52.413 104.059  1.00 46.93           O
ATOM    614  CB  GLN A 107     -36.501  51.396 104.990  1.00 64.70           C
ATOM    615  CG  GLN A 107     -36.833  52.801 104.492  1.00 75.71           C
ATOM    616  CD  GLN A 107     -38.271  52.926 104.010  1.00 77.30           C
ATOM    617  OE1 GLN A 107     -39.179  52.374 104.619  1.00 78.88           O
ATOM    618  NE2 GLN A 107     -38.483  53.660 102.920  1.00 74.52           N
ATOM    619  N   ALA A 108     -33.530  50.174 104.171  1.00 44.21           N
ATOM    620  CA  ALA A 108     -32.523  50.101 103.134  1.00 45.01           C
ATOM    621  C   ALA A 108     -33.214  50.307 101.806  1.00 46.03           C
ATOM    622  O   ALA A 108     -34.401  50.040 101.675  1.00 45.34           O
ATOM    623  CB  ALA A 108     -31.853  48.748 103.158  1.00 50.26           C
ATOM    624  N   ASP A 109     -32.468  50.792 100.824  1.00 50.12           N
ATOM    625  CA  ASP A 109     -33.011  51.006  99.495  1.00 58.74           C
ATOM    626  C   ASP A 109     -33.751  49.727  99.096  1.00 60.18           C
ATOM    627  O   ASP A 109     -33.189  48.636  99.117  1.00 60.68           O
ATOM    628  CB  ASP A 109     -31.876  51.288  98.524  1.00 65.46           C
ATOM    629  CG  ASP A 109     -32.368  51.750  97.184  1.00 69.48           C
ATOM    630  OD1 ASP A 109     -32.987  52.833  97.132  1.00 77.79           O
ATOM    631  OD2 ASP A 109     -32.134  51.036  96.186  1.00 64.36           O
ATOM    632  N   PRO A 110     -35.029  49.850  98.725  1.00 63.63           N
ATOM    633  CA  PRO A 110     -35.869  48.718  98.328  1.00 68.57           C
ATOM    634  C   PRO A 110     -35.279  47.860  97.227  1.00 68.18           C
ATOM    635  O   PRO A 110     -35.295  46.633  97.303  1.00 69.60           O
ATOM    636  CB  PRO A 110     -37.157  49.390  97.871  1.00 72.56           C
ATOM    637  CG  PRO A 110     -37.174  50.668  98.646  1.00 71.02           C
ATOM    638  CD  PRO A 110     -35.750  51.117  98.532  1.00 68.06           C
ATOM    639  N   GLN A 111     -34.761  48.523  96.201  1.00 69.52           N
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ATOM    640  CA  GLN A 111     -34.185  47.846  95.047  1.00 69.50           C
ATOM    641  C   GLN A 111     -32.822  47.199  95.308  1.00 65.01           C
ATOM    642  O   GLN A 111     -32.589  46.057  94.915  1.00 69.57           O
ATOM    643  CB  GLN A 111     -34.075  48.831  93.877  1.00 77.55           C
ATOM    644  CG  GLN A 111     -35.379  49.542  93.519  1.00 91.86           C
ATOM    645  CD  GLN A 111     -35.797  50.560  94.562  1.00 95.66           C
ATOM    646  OE1 GLN A 111     -35.040  51.469  94.889  1.00 97.70           O
ATOM    647  NE2 GLN A 111     -37.009  50.415  95.083  1.00 90.78           N
ATOM    648  N   ARG A 112     -31.933  47.925  95.979  1.00 57.71           N
ATOM    649  CA  ARG A 112     -30.598  47.416  96.278  1.00 49.91           C
ATOM    650  C   ARG A 112     -30.535  46.547  97.551  1.00 46.94           C
ATOM    651  O   ARG A 112     -29.542  45.863  97.803  1.00 39.87           O
ATOM    652  CB  ARG A 112     -29.614  48.597  96.367  1.00 48.63           C
ATOM    653  CG  ARG A 112     -29.482  49.367  95.056  1.00 49.72           C
ATOM    654  CD  ARG A 112     -28.531  50.554  95.113  1.00 46.10           C
ATOM    655  NE  ARG A 112     -29.063  51.668  95.887  1.00 52.81           N
ATOM    656  CZ  ARG A 112     -28.722  51.919  97.144  1.00 68.43           C
ATOM    657  NH1 ARG A 112     -27.848  51.127  97.747  1.00 79.08           N
ATOM    658  NH2 ARG A 112     -29.252  52.948  97.801  1.00 75.10           N
ATOM    659  N   PHE A 113     -31.605  46.555  98.339  1.00 50.25           N
ATOM    660  CA  PHE A 113     -31.642  45.774  99.572  1.00 50.71           C
ATOM    661  C   PHE A 113     -33.074  45.326  99.850  1.00 52.92           C
ATOM    662  O   PHE A 113     -33.640  45.630 100.900  1.00 57.25           O
ATOM    663  CB  PHE A 113     -31.136  46.625 100.737  1.00 54.24           C
ATOM    664  CG  PHE A 113     -29.684  47.023 100.625  1.00 58.84           C
ATOM    665  CD1 PHE A 113     -28.674  46.090 100.823  1.00 59.23           C
ATOM    666  CD2 PHE A 113     -29.326  48.334 100.319  1.00 66.37           C
ATOM    667  CE1 PHE A 113     -27.327  46.461 100.722  1.00 55.58           C
ATOM    668  CE2 PHE A 113     -27.981  48.710 100.214  1.00 63.98           C
ATOM    669  CZ  PHE A 113     -26.983  47.770 100.415  1.00 57.08           C
ATOM    670  N   PRO A 114     -33.669  44.582  98.906  1.00 50.78           N
ATOM    671  CA  PRO A 114     -35.027  44.021  98.887  1.00 48.50           C
ATOM    672  C   PRO A 114     -35.381  43.128 100.057  1.00 47.73           C
ATOM    673  O   PRO A 114     -36.490  43.204 100.600  1.00 46.16           O
ATOM    674  CB  PRO A 114     -35.054  43.253  97.581  1.00 50.90           C
ATOM    675  CG  PRO A 114     -33.655  42.742  97.506  1.00 45.72           C
ATOM    676  CD  PRO A 114     -32.867  43.985  97.826  1.00 47.08           C
ATOM    677  N   HIS A 115     -34.445  42.265 100.431  1.00 44.63           N
ATOM    678  CA  HIS A 115     -34.681  41.365 101.545  1.00 53.14           C
ATOM    679  C   HIS A 115     -34.580  42.076 102.892  1.00 58.55           C
ATOM    680  O   HIS A 115     -35.210  41.658 103.854  1.00 65.19           O
ATOM    681  CB  HIS A 115     -33.699  40.204 101.489  1.00 47.76           C
ATOM    682  CG  HIS A 115     -33.849  39.356 100.268  1.00 46.31           C
ATOM    683  ND1 HIS A 115     -35.061  38.833  99.874  1.00 57.77           N
ATOM    684  CD2 HIS A 115     -32.941  38.931  99.359  1.00 42.56           C
ATOM    685  CE1 HIS A 115     -34.894  38.123  98.773  1.00 58.00           C
ATOM    686  NE2 HIS A 115     -33.617  38.166  98.440  1.00 53.03           N
ATOM    687  N   GLY A 116     -33.794  43.149 102.954  1.00 55.93           N
ATOM    688  CA  GLY A 116     -33.649  43.897 104.193  1.00 49.77           C
ATOM    689  C   GLY A 116     -32.440  43.536 105.028  1.00 42.46           C
ATOM    690  O   GLY A 116     -31.990  42.392 105.052  1.00 41.59           O
ATOM    691  N   ILE A 117     -31.916  44.529 105.734  1.00 38.38           N
ATOM    692  CA  ILE A 117     -30.746  44.318 106.580  1.00 30.95           C
ATOM    693  C   ILE A 117     -30.837  43.057 107.412  1.00 35.65           C
ATOM    694  O   ILE A 117     -30.069  42.125 107.194  1.00 40.26           O
ATOM    695  CB  ILE A 117     -30.531  45.455 107.565  1.00 26.18           C
ATOM    696  CG1 ILE A 117     -30.420  46.783 106.810  1.00 19.83           C
ATOM    697  CG2 ILE A 117     -29.275  45.190 108.344  1.00 16.45           C
ATOM    698  CD1 ILE A 117     -29.218  46.863 105.923  1.00  3.31           C
ATOM    699  N   ARG A 118     -31.761  43.038 108.375  1.00 39.17           N
ATOM    700  CA  ARG A 118     -31.912  41.872 109.239  1.00 49.23           C
ATOM    701  C   ARG A 118     -31.394  40.643 108.531  1.00 53.14           C
ATOM    702  O   ARG A 118     -30.312  40.155 108.835  1.00 56.73           O
ATOM    703  CB  ARG A 118     -33.369  41.626 109.601  1.00 56.41           C
ATOM    704  CG  ARG A 118     -33.605  40.231 110.201  1.00 62.55           C
ATOM    705  CD  ARG A 118     -35.066  39.819 110.216  1.00 64.78           C
ATOM    706  NE  ARG A 118     -35.876  40.751 110.985  1.00 78.48           N
ATOM    707  CZ  ARG A 118     -36.212  41.971 110.575  1.00 83.25           C
ATOM    708  NH1 ARG A 118     -35.816  42.420 109.389  1.00 85.88           N
ATOM    709  NH2 ARG A 118     -36.932  42.754 111.363  1.00 85.50           N
ATOM    710  N   GLN A 119     -32.169  40.161 107.568  1.00 51.32           N
ATOM    711  CA  GLN A 119     -31.766  38.977 106.843  1.00 49.87           C
ATOM    712  C   GLN A 119     -30.331  39.021 106.368  1.00 46.58           C
ATOM    713  O   GLN A 119     -29.608  38.035 106.468  1.00 53.92           O
ATOM    714  CB  GLN A 119     -32.705  38.706 105.681  1.00 53.02           C
ATOM    715  CG  GLN A 119     -33.884  37.847 106.104  1.00 62.39           C
ATOM    716  CD  GLN A 119     -34.912  37.680 105.014  1.00 65.61           C
ATOM    717  OE1 GLN A 119     -34.610  37.145 103.961  1.00 72.73           O
ATOM    718  NE2 GLN A 119     -36.132  38.136 105.259  1.00 65.96           N
ATOM    719  N   LEU A 120     -29.904  40.171 105.877  1.00 38.64           N
ATOM    720  CA  LEU A 120     -28.531  40.306 105.432  1.00 27.87           C
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ATOM    721  C   LEU A 120     -27.623  39.860 106.580  1.00 23.13           C
ATOM    722  O   LEU A 120     -26.772  38.972 106.436  1.00 19.96           O
ATOM    723  CB  LEU A 120     -28.235  41.764 105.072  1.00 24.63           C
ATOM    724  CG  LEU A 120     -26.786  42.073 104.710  1.00 17.89           C
ATOM    725  CD1 LEU A 120     -26.377  41.287 103.496  1.00  3.31           C
ATOM    726  CD2 LEU A 120     -26.643  43.548 104.450  1.00 28.71           C
ATOM    727  N   ALA A 121     -27.845  40.493 107.729  1.00 20.79           N
ATOM    728  CA  ALA A 121     -27.092  40.223 108.943  1.00 30.72           C
ATOM    729  C   ALA A 121     -27.011  38.730 109.224  1.00 38.03           C
ATOM    730  O   ALA A 121     -25.931  38.190 109.460  1.00 42.89           O
ATOM    731  CB  ALA A 121     -27.733  40.945 110.134  1.00 31.00           C
ATOM    732  N   ASN A 122     -28.157  38.065 109.190  1.00 40.73           N
ATOM    733  CA  ASN A 122     -28.207  36.645 109.466  1.00 46.05           C
ATOM    734  C   ASN A 122     -27.291  35.856 108.567  1.00 45.38           C
ATOM    735  O   ASN A 122     -26.713  34.868 109.003  1.00 47.50           O
ATOM    736  CB  ASN A 122     -29.623  36.127 109.319  1.00 56.34           C
ATOM    737  CG  ASN A 122     -30.617  36.961 110.080  1.00 64.60           C
ATOM    738  OD1 ASN A 122     -30.363  37.361 111.216  1.00 61.74           O
ATOM    739  ND2 ASN A 122     -31.762  37.231 109.465  1.00 79.71           N
ATOM    740  N   TYR A 123     -27.154  36.272 107.312  1.00 40.88           N
ATOM    741  CA  TYR A 123     -26.253  35.562 106.413  1.00 45.83           C
ATOM    742  C   TYR A 123     -24.857  35.830 106.936  1.00 41.18           C
ATOM    743  O   TYR A 123     -24.065  34.911 107.163  1.00 40.91           O
ATOM    744  CB  TYR A 123     -26.376  36.080 104.975  1.00 54.03           C
ATOM    745  CG  TYR A 123     -25.406  35.376 104.037  1.00 62.59           C
ATOM    746  CD1 TYR A 123     -25.562  34.018 103.722  1.00 75.25           C
ATOM    747  CD2 TYR A 123     -24.288  36.039 103.535  1.00 55.30           C
ATOM    748  CE1 TYR A 123     -24.627  33.349 102.943  1.00 76.30           C
ATOM    749  CE2 TYR A 123     -23.352  35.380 102.762  1.00 58.81           C
ATOM    750  CZ  TYR A 123     -23.520  34.034 102.468  1.00 71.09           C
ATOM    751  OH  TYR A 123     -22.567  33.369 101.722  1.00 67.72           O
ATOM    752  N   VAL A 124     -24.579  37.113 107.131  1.00 36.55           N
ATOM    753  CA  VAL A 124     -23.293  37.555 107.648  1.00 30.58           C
ATOM    754  C   VAL A 124     -22.923  36.752 108.906  1.00 26.95           C
ATOM    755  O   VAL A 124     -21.779  36.317 109.063  1.00 21.59           O
ATOM    756  CB  VAL A 124     -23.350  39.040 108.005  1.00 35.31           C
ATOM    757  CG1 VAL A 124     -21.955  39.563 108.313  1.00 38.27           C
ATOM    758  CG2 VAL A 124     -23.983  39.806 106.867  1.00 32.66           C
ATOM    759  N   HIS A 125     -23.888  36.571 109.801  1.00 25.84           N
ATOM    760  CA  HIS A 125     -23.632  35.807 111.001  1.00 27.43           C
ATOM    761  C   HIS A 125     -23.486  34.325 110.638  1.00 25.94           C
ATOM    762  O   HIS A 125     -22.593  33.642 111.128  1.00 20.70           O
ATOM    763  CB  HIS A 125     -24.766  35.988 112.012  1.00 42.27           C
ATOM    764  CG  HIS A 125     -24.966  37.401 112.466  1.00 51.98           C
ATOM    765  ND1 HIS A 125     -23.963  38.142 113.049  1.00 54.13           N
ATOM    766  CD2 HIS A 125     -26.061  38.200 112.437  1.00 51.03           C
ATOM    767  CE1 HIS A 125     -24.431  39.337 113.358  1.00 49.04           C
ATOM    768  NE2 HIS A 125     -25.700  39.398 112.997  1.00 47.54           N
ATOM    769  N   SER A 126     -24.366  33.839 109.768  1.00 23.94           N
ATOM    770  CA  SER A 126     -24.323  32.450 109.332  1.00 26.69           C
ATOM    771  C   SER A 126     -22.912  32.160 108.886  1.00 28.55           C
ATOM    772  O   SER A 126     -22.385  31.083 109.131  1.00 30.63           O
ATOM    773  CB  SER A 126     -25.382  32.193 108.258  1.00 20.10           C
ATOM    774  OG  SER A 126     -25.398  30.829 107.874  1.00 25.00           O
ATOM    775  N   LYS A 127     -22.298  33.135 108.230  1.00 31.85           N
ATOM    776  CA  LYS A 127     -20.927  32.984 107.755  1.00 36.73           C
ATOM    777  C   LYS A 127     -19.890  33.326 108.835  1.00 36.08           C
ATOM    778  O   LYS A 127     -18.692  33.452 108.541  1.00 39.60           O
ATOM    779  CB  LYS A 127     -20.691  33.852 106.514  1.00 33.46           C
ATOM    780  CG  LYS A 127     -21.583  33.489 105.342  1.00 47.96           C
ATOM    781  CD  LYS A 127     -20.805  32.820 104.228  1.00 46.23           C
ATOM    782  CE  LYS A 127     -20.139  31.546 104.698  1.00 50.82           C
ATOM    783  NZ  LYS A 127     -19.322  30.992 103.587  1.00 57.29           N
ATOM    784  N   GLY A 128     -20.359  33.497 110.070  1.00 34.48           N
ATOM    785  CA  GLY A 128     -19.480  33.774 111.194  1.00 34.06           C
ATOM    786  C   GLY A 128     -18.976  35.191 111.378  1.00 36.68           C
ATOM    787  O   GLY A 128     -18.224  35.480 112.319  1.00 35.44           O
ATOM    788  N   LEU A 129     -19.396  36.090 110.503  1.00 36.41           N
ATOM    789  CA  LEU A 129     -18.947  37.469 110.591  1.00 33.42           C
ATOM    790  C   LEU A 129     -19.921  38.376 111.318  1.00 37.65           C
ATOM    791  O   LEU A 129     -21.029  37.970 111.673  1.00 43.74           O
ATOM    792  CB  LEU A 129     -18.701  37.997 109.190  1.00 28.00           C
ATOM    793  CG  LEU A 129     -17.828  37.000 108.435  1.00 37.07           C
ATOM    794  CD1 LEU A 129     -17.820  37.326 106.945  1.00 36.47           C
ATOM    795  CD2 LEU A 129     -16.428  37.012 109.048  1.00 31.18           C
ATOM    796  N   LYS A 130     -19.494  39.612 111.534  1.00 38.98           N
ATOM    797  CA  LYS A 130     -20.324  40.596 112.200  1.00 38.49           C
ATOM    798  C   LYS A 130     -20.555  41.755 111.232  1.00 37.28           C
ATOM    799  O   LYS A 130     -19.642  42.191 110.530  1.00 33.90           O
ATOM    800  CB  LYS A 130     -19.641  41.058 113.489  1.00 39.52           C
ATOM    801  CG  LYS A 130     -19.202  39.878 114.370  1.00 50.59           C
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ATOM    802  CD  LYS A 130     -19.089  40.247 115.858  1.00 60.93           C
ATOM    803  CE  LYS A 130     -18.735  39.035 116.736  1.00 65.02           C
ATOM    804  NZ  LYS A 130     -19.726  37.920 116.647  1.00 72.58           N
ATOM    805  N   LEU A 131     -21.790  42.237 111.184  1.00 38.70           N
ATOM    806  CA  LEU A 131     -22.164  43.331 110.289  1.00 34.94           C
ATOM    807  C   LEU A 131     -22.144  44.712 110.935  1.00 33.78           C
ATOM    808  O   LEU A 131     -22.399  44.868 112.136  1.00 41.70           O
ATOM    809  CB  LEU A 131     -23.559  43.087 109.715  1.00 37.94           C
ATOM    810  CG  LEU A 131     -24.239  44.327 109.135  1.00 37.70           C
ATOM    811  CD1 LEU A 131     -23.559  44.723 107.839  1.00 44.11           C
ATOM    812  CD2 LEU A 131     -25.718  44.042 108.905  1.00 49.63           C
ATOM    813  N   GLY A 132     -21.861  45.718 110.116  1.00 23.79           N
ATOM    814  CA  GLY A 132     -21.821  47.086 110.599  1.00 25.48           C
ATOM    815  C   GLY A 132     -22.558  48.004 109.644  1.00 24.70           C
ATOM    816  O   GLY A 132     -22.493  47.836 108.419  1.00 24.30           O
ATOM    817  N   ILE A 133     -23.252  48.989 110.198  1.00 26.81           N
ATOM    818  CA  ILE A 133     -24.004  49.914 109.373  1.00 27.58           C
ATOM    819  C   ILE A 133     -23.593  51.364 109.633  1.00 22.90           C
ATOM    820  O   ILE A 133     -23.066  51.706 110.695  1.00 19.27           O
ATOM    821  CB  ILE A 133     -25.498  49.749 109.632  1.00 27.23           C
ATOM    822  CG1 ILE A 133     -26.298  50.513 108.584  1.00 33.19           C
ATOM    823  CG2 ILE A 133     -25.817  50.200 111.044  1.00 35.16           C
ATOM    824  CD1 ILE A 133     -26.139  49.956 107.205  1.00 36.23           C
ATOM    825  N   TYR A 134     -23.850  52.207 108.641  1.00 28.15           N
ATOM    826  CA  TYR A 134     -23.514  53.619 108.697  1.00 32.08           C
ATOM    827  C   TYR A 134     -24.745  54.437 109.061  1.00 31.58           C
ATOM    828  O   TYR A 134     -25.849  54.081 108.676  1.00 31.09           O
ATOM    829  CB  TYR A 134     -22.971  54.035 107.326  1.00 42.18           C
ATOM    830  CG  TYR A 134     -22.758  55.517 107.114  1.00 42.79           C
ATOM    831  CD1 TYR A 134     -21.473  56.048 106.963  1.00 51.16           C
ATOM    832  CD2 TYR A 134     -23.843  56.383 107.026  1.00 49.28           C
ATOM    833  CE1 TYR A 134     -21.281  57.405 106.725  1.00 55.37           C
ATOM    834  CE2 TYR A 134     -23.663  57.735 106.791  1.00 53.57           C
ATOM    835  CZ  TYR A 134     -22.383  58.238 106.640  1.00 53.18           C
ATOM    836  OH  TYR A 134     -22.224  59.576 106.398  1.00 60.11           O
ATOM    837  N   ALA A 135     -24.552  55.530 109.798  1.00 31.65           N
ATOM    838  CA  ALA A 135     -25.657  56.405 110.200  1.00 34.85           C
ATOM    839  C   ALA A 135     -25.128  57.806 110.372  1.00 35.25           C
ATOM    840  O   ALA A 135     -23.920  58.004 110.371  1.00 35.80           O
ATOM    841  CB  ALA A 135     -26.265  55.926 111.507  1.00 30.46           C
ATOM    842  N   ASP A 136     -26.017  58.781 110.524  1.00 29.23           N
ATOM    843  CA  ASP A 136     -25.558  60.154 110.717  1.00 28.02           C
ATOM    844  C   ASP A 136     -26.319  60.894 111.805  1.00 25.33           C
ATOM    845  O   ASP A 136     -27.544  60.892 111.848  1.00 28.97           O
ATOM    846  CB  ASP A 136     -25.629  60.967 109.416  1.00 30.58           C
ATOM    847  CG  ASP A 136     -24.689  62.175 109.435  1.00 31.24           C
ATOM    848  OD1 ASP A 136     -24.857  63.060 110.301  1.00  3.31           O
ATOM    849  OD2 ASP A 136     -23.771  62.230 108.588  1.00 35.23           O
ATOM    850  N   VAL A 137     -25.559  61.542 112.670  1.00 24.06           N
ATOM    851  CA  VAL A 137     -26.111  62.284 113.782  1.00 29.17           C
ATOM    852  C   VAL A 137     -27.011  63.444 113.405  1.00 27.79           C
ATOM    853  O   VAL A 137     -27.982  63.730 114.108  1.00 18.72           O
ATOM    854  CB  VAL A 137     -24.993  62.863 114.683  1.00 29.13           C
ATOM    855  CG1 VAL A 137     -24.305  64.015 113.946  1.00 37.05           C
ATOM    856  CG2 VAL A 137     -25.569  63.343 115.990  1.00 28.08           C
ATOM    857  N   GLY A 138     -26.678  64.120 112.315  1.00 33.18           N
ATOM    858  CA  GLY A 138     -27.453  65.273 111.911  1.00 46.02           C
ATOM    859  C   GLY A 138     -28.739  65.033 111.159  1.00 51.07           C
ATOM    860  O   GLY A 138     -29.370  63.984 111.297  1.00 56.77           O
ATOM    861  N   ASN A 139     -29.112  66.019 110.348  1.00 53.59           N
ATOM    862  CA  ASN A 139     -30.332  65.951 109.563  1.00 50.34           C
ATOM    863  C   ASN A 139     -30.175  65.110 108.258  1.00 41.50           C
ATOM    864  O   ASN A 139     -31.166  64.798 107.598  1.00 34.93           O
ATOM    865  CB  ASN A 139     -30.839  67.393 109.281  1.00 62.95           C
ATOM    866  CG  ASN A 139     -31.173  68.176 110.578  1.00 71.51           C
ATOM    867  OD1 ASN A 139     -31.352  67.553 111.627  1.00 71.83           O
ATOM    868  ND2 ASN A 139     -31.259  69.515 110.510  1.00 81.75           N
ATOM    869  N   LYS A 140     -28.945  64.726 107.907  1.00 37.35           N
ATOM    870  CA  LYS A 140     -28.668  63.896 106.717  1.00 35.87           C
ATOM    871  C   LYS A 140     -27.304  63.215 106.831  1.00 38.24           C
ATOM    872  O   LYS A 140     -26.441  63.662 107.586  1.00 44.31           O
ATOM    873  CB  LYS A 140     -28.640  64.718 105.433  1.00 29.88           C
ATOM    874  CG  LYS A 140     -29.974  64.985 104.795  1.00 40.49           C
ATOM    875  CD  LYS A 140     -29.785  65.887 103.584  1.00 62.52           C
ATOM    876  CE  LYS A 140     -31.122  66.383 103.054  1.00 70.29           C
ATOM    877  NZ  LYS A 140     -30.972  67.444 102.015  1.00 70.68           N
ATOM    878  N   THR A 141     -27.115  62.128 106.085  1.00 37.15           N
ATOM    879  CA  THR A 141     -25.838  61.422 106.076  1.00 35.50           C
ATOM    880  C   THR A 141     -25.039  62.284 105.118  1.00 36.92           C
ATOM    881  O   THR A 141     -25.639  63.087 104.405  1.00 42.58           O
ATOM    882  CB  THR A 141     -25.975  60.033 105.472  1.00 32.93           C
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ATOM    883  OG1 THR A 141     -26.291  60.149 104.084  1.00 29.61           O
ATOM    884  CG2 THR A 141     -27.092  59.270 106.139  1.00 39.81           C
ATOM    885  N   CYS A 142     -23.714  62.164 105.077  1.00 38.49           N
ATOM    886  CA  CYS A 142     -22.977  63.007 104.136  1.00 44.01           C
ATOM    887  C   CYS A 142     -23.473  62.742 102.724  1.00 44.89           C
ATOM    888  O   CYS A 142     -23.156  63.486 101.806  1.00 50.35           O
ATOM    889  CB  CYS A 142     -21.459  62.773 104.205  1.00 51.38           C
ATOM    890  SG  CYS A 142     -20.666  63.238 105.784  1.00 72.02           S
ATOM    891  N   ALA A 143     -24.270  61.691 102.566  1.00 45.64           N
ATOM    892  CA  ALA A 143     -24.804  61.329 101.263  1.00 52.01           C
ATOM    893  C   ALA A 143     -26.059  62.115 100.901  1.00 59.39           C
ATOM    894  O   ALA A 143     -26.345  62.316  99.726  1.00 63.73           O
ATOM    895  CB  ALA A 143     -25.106  59.850 101.220  1.00 54.75           C
ATOM    896  N   GLY A 144     -26.806  62.558 101.905  1.00 63.40           N
ATOM    897  CA  GLY A 144     -28.025  63.303 101.642  1.00 68.16           C
ATOM    898  C   GLY A 144     -29.212  62.498 102.121  1.00 67.45           C
ATOM    899  O   GLY A 144     -30.330  62.996 102.269  1.00 73.47           O
ATOM    900  N   PHE A 145     -28.963  61.225 102.373  1.00 61.79           N
ATOM    901  CA  PHE A 145     -30.022  60.351 102.843  1.00 57.87           C
ATOM    902  C   PHE A 145     -30.378  60.634 104.292  1.00 54.82           C
ATOM    903  O   PHE A 145     -29.678  61.390 104.967  1.00 52.34           O
ATOM    904  CB  PHE A 145     -29.584  58.898 102.698  1.00 56.96           C
ATOM    905  CG  PHE A 145     -29.472  58.447 101.282  1.00 58.46           C
ATOM    906  CD1 PHE A 145     -30.591  58.397 100.479  1.00 63.62           C
ATOM    907  CD2 PHE A 145     -28.246  58.096 100.744  1.00 56.83           C
ATOM    908  CE1 PHE A 145     -30.500  58.028  99.150  1.00 71.78           C
ATOM    909  CE2 PHE A 145     -28.141  57.727  99.423  1.00 62.21           C
ATOM    910  CZ  PHE A 145     -29.271  57.684  98.618  1.00 69.70           C
ATOM    911  N   PRO A 146     -31.477  60.038 104.777  1.00 56.74           N
ATOM    912  CA  PRO A 146     -31.988  60.176 106.139  1.00 60.73           C
ATOM    913  C   PRO A 146     -30.920  60.463 107.166  1.00 59.16           C
ATOM    914  O   PRO A 146     -29.834  59.916 107.090  1.00 67.99           O
ATOM    915  CB  PRO A 146     -32.670  58.843 106.361  1.00 65.25           C
ATOM    916  CG  PRO A 146     -33.358  58.661 105.042  1.00 70.30           C
ATOM    917  CD  PRO A 146     -32.298  59.078 104.015  1.00 60.08           C
ATOM    918  N   GLY A 147     -31.254  61.312 108.130  1.00 54.04           N
ATOM    919  CA  GLY A 147     -30.312  61.666 109.168  1.00 49.65           C
ATOM    920  C   GLY A 147     -30.484  60.721 110.331  1.00 46.61           C
ATOM    921  O   GLY A 147     -30.271  59.522 110.187  1.00 50.36           O
ATOM    922  N   SER A 148     -30.897  61.259 111.471  1.00 43.80           N
ATOM    923  CA  SER A 148     -31.109  60.474 112.677  1.00 48.24           C
ATOM    924  C   SER A 148     -31.480  61.423 113.800  1.00 54.21           C
ATOM    925  O   SER A 148     -31.791  61.006 114.918  1.00 55.54           O
ATOM    926  CB  SER A 148     -29.846  59.702 113.062  1.00 42.87           C
ATOM    927  OG  SER A 148     -29.742  58.485 112.350  1.00 45.45           O
ATOM    928  N   PHE A 149     -31.434  62.711 113.484  1.00 60.50           N
ATOM    929  CA  PHE A 149     -31.753  63.755 114.438  1.00 61.79           C
ATOM    930  C   PHE A 149     -33.112  63.496 115.045  1.00 64.22           C
ATOM    931  O   PHE A 149     -34.107  63.413 114.329  1.00 64.91           O
ATOM    932  CB  PHE A 149     -31.753  65.112 113.741  1.00 65.43           C
ATOM    933  CG  PHE A 149     -31.915  66.262 114.675  1.00 67.92           C
ATOM    934  CD1 PHE A 149     -31.151  66.330 115.829  1.00 65.58           C
ATOM    935  CD2 PHE A 149     -32.825  67.275 114.405  1.00 76.80           C
ATOM    936  CE1 PHE A 149     -31.280  67.393 116.705  1.00 75.12           C
ATOM    937  CE2 PHE A 149     -32.968  68.350 115.274  1.00 83.75           C
ATOM    938  CZ  PHE A 149     -32.193  68.408 116.432  1.00 83.27           C
ATOM    939  N   GLY A 150     -33.157  63.376 116.365  1.00 67.83           N
ATOM    940  CA  GLY A 150     -34.424  63.125 117.020  1.00 74.79           C
ATOM    941  C   GLY A 150     -35.020  61.806 116.581  1.00 76.82           C
ATOM    942  O   GLY A 150     -36.199  61.723 116.244  1.00 87.25           O
ATOM    943  N   TYR A 151     -34.190  60.773 116.562  1.00 71.76           N
ATOM    944  CA  TYR A 151     -34.624  59.440 116.160  1.00 66.00           C
ATOM    945  C   TYR A 151     -33.688  58.441 116.817  1.00 61.26           C
ATOM    946  O   TYR A 151     -33.960  57.240 116.851  1.00 56.60           O
ATOM    947  CB  TYR A 151     -34.529  59.276 114.639  1.00 73.54           C
ATOM    948  CG  TYR A 151     -35.575  60.019 113.820  1.00 76.28           C
ATOM    949  CD1 TYR A 151     -36.916  59.617 113.809  1.00 82.28           C
ATOM    950  CD2 TYR A 151     -35.210  61.093 113.011  1.00 79.60           C
ATOM    951  CE1 TYR A 151     -37.857  60.265 113.007  1.00 84.58           C
ATOM    952  CE2 TYR A 151     -36.142  61.744 112.209  1.00 86.91           C
ATOM    953  CZ  TYR A 151     -37.458  61.326 112.210  1.00 85.18           C
ATOM    954  OH  TYR A 151     -38.361  61.967 111.399  1.00 84.45           O
ATOM    955  N   TYR A 152     -32.577  58.960 117.332  1.00 57.27           N
ATOM    956  CA  TYR A 152     -31.556  58.150 117.980  1.00 56.78           C
ATOM    957  C   TYR A 152     -32.129  56.895 118.610  1.00 56.79           C
ATOM    958  O   TYR A 152     -31.900  55.787 118.122  1.00 59.65           O
ATOM    959  CB  TYR A 152     -30.833  58.977 119.038  1.00 57.11           C
ATOM    960  CG  TYR A 152     -30.262  60.266 118.493  1.00 51.41           C
ATOM    961  CD1 TYR A 152     -29.449  60.272 117.356  1.00 45.75           C
ATOM    962  CD2 TYR A 152     -30.543  61.483 119.106  1.00 52.15           C
ATOM    963  CE1 TYR A 152     -28.934  61.459 116.844  1.00 40.47           C
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ATOM    964  CE2 TYR A 152     -30.030  62.680 118.602  1.00 50.45           C
ATOM    965  CZ  TYR A 152     -29.228  62.661 117.472  1.00 41.43           C
ATOM    966  OH  TYR A 152     -28.723  63.839 116.972  1.00 33.76           O
ATOM    967  N   ASP A 153     -32.879  57.068 119.692  1.00 53.39           N
ATOM    968  CA  ASP A 153     -33.479  55.931 120.369  1.00 59.36           C
ATOM    969  C   ASP A 153     -34.119  54.968 119.363  1.00 61.05           C
ATOM    970  O   ASP A 153     -33.724  53.806 119.279  1.00 69.33           O
ATOM    971  CB  ASP A 153     -34.519  56.409 121.383  1.00 61.10           C
ATOM    972  CG  ASP A 153     -33.905  57.192 122.522  1.00 66.61           C
ATOM    973  OD1 ASP A 153     -32.967  56.666 123.159  1.00 74.47           O
ATOM    974  OD2 ASP A 153     -34.368  58.324 122.785  1.00 67.84           O
ATOM    975  N   ILE A 154     -35.089  55.446 118.590  1.00 58.54           N
ATOM    976  CA  ILE A 154     -35.744  54.590 117.603  1.00 56.48           C
ATOM    977  C   ILE A 154     -34.714  53.813 116.799  1.00 53.07           C
ATOM    978  O   ILE A 154     -34.649  52.584 116.868  1.00 55.38           O
ATOM    979  CB  ILE A 154     -36.582  55.402 116.607  1.00 60.62           C
ATOM    980  CG1 ILE A 154     -37.745  56.075 117.331  1.00 60.11           C
ATOM    981  CG2 ILE A 154     -37.103  54.491 115.510  1.00 58.52           C
ATOM    982  CD1 ILE A 154     -38.627  56.910 116.424  1.00 68.47           C
ATOM    983  N   ASP A 155     -33.915  54.548 116.034  1.00 49.17           N
ATOM    984  CA  ASP A 155     -32.881  53.949 115.207  1.00 48.75           C
ATOM    985  C   ASP A 155     -32.097  52.895 115.975  1.00 46.33           C
ATOM    986  O   ASP A 155     -31.971  51.757 115.531  1.00 47.70           O
ATOM    987  CB  ASP A 155     -31.941  55.038 114.687  1.00 56.70           C
ATOM    988  CG  ASP A 155     -32.637  55.999 113.730  1.00 65.61           C
ATOM    989  OD1 ASP A 155     -31.990  56.962 113.255  1.00 66.95           O
ATOM    990  OD2 ASP A 155     -33.837  55.786 113.447  1.00 76.23           O
ATOM    991  N   ALA A 156     -31.575  53.271 117.133  1.00 43.12           N
ATOM    992  CA  ALA A 156     -30.819  52.323 117.934  1.00 51.16           C
ATOM    993  C   ALA A 156     -31.570  50.994 118.019  1.00 57.39           C
ATOM    994  O   ALA A 156     -31.122  49.981 117.488  1.00 54.91           O
ATOM    995  CB  ALA A 156     -30.580  52.890 119.330  1.00 54.88           C
ATOM    996  N   GLN A 157     -32.723  51.004 118.676  1.00 62.27           N
ATOM    997  CA  GLN A 157     -33.515  49.791 118.815  1.00 62.11           C
ATOM    998  C   GLN A 157     -33.610  49.115 117.454  1.00 58.35           C
ATOM    999  O   GLN A 157     -33.424  47.901 117.336  1.00 55.24           O
ATOM   1000  CB  GLN A 157     -34.918  50.122 119.333  1.00 66.46           C
ATOM   1001  CG  GLN A 157     -35.418  49.129 120.344  1.00 68.51           C
ATOM   1002  CD  GLN A 157     -34.542  49.106 121.575  1.00 73.20           C
ATOM   1003  OE1 GLN A 157     -34.440  50.103 122.291  1.00 72.76           O
ATOM   1004  NE2 GLN A 157     -33.893  47.971 121.825  1.00 73.79           N
ATOM   1005  N   THR A 158     -33.895  49.907 116.425  1.00 55.78           N
ATOM   1006  CA  THR A 158     -34.001  49.375 115.076  1.00 57.61           C
ATOM   1007  C   THR A 158     -32.802  48.459 114.822  1.00 59.20           C
ATOM   1008  O   THR A 158     -32.946  47.236 114.805  1.00 59.18           O
ATOM   1009  CB  THR A 158     -34.012  50.508 114.017  1.00 59.39           C
ATOM   1010  OG1 THR A 158     -35.156  51.348 114.216  1.00 58.60           O
ATOM   1011  CG2 THR A 158     -34.061  49.927 112.619  1.00 59.01           C
ATOM   1012  N   PHE A 159     -31.621  49.056 114.651  1.00 58.19           N
ATOM   1013  CA  PHE A 159     -30.387  48.299 114.398  1.00 52.96           C
ATOM   1014  C   PHE A 159     -30.257  47.139 115.368  1.00 51.83           C
ATOM   1015  O   PHE A 159     -30.010  45.998 114.966  1.00 52.13           O
ATOM   1016  CB  PHE A 159     -29.148  49.174 114.588  1.00 39.41           C
ATOM   1017  CG  PHE A 159     -29.164  50.447 113.803  1.00 33.46           C
ATOM   1018  CD1 PHE A 159     -29.153  50.425 112.414  1.00 40.11           C
ATOM   1019  CD2 PHE A 159     -29.158  51.677 114.456  1.00 27.14           C
ATOM   1020  CE1 PHE A 159     -29.131  51.608 111.687  1.00 39.56           C
ATOM   1021  CE2 PHE A 159     -29.136  52.861 113.744  1.00 26.61           C
ATOM   1022  CZ  PHE A 159     -29.122  52.829 112.353  1.00 29.93           C
ATOM   1023  N   ALA A 160     -30.396  47.457 116.651  1.00 46.49           N
ATOM   1024  CA  ALA A 160     -30.293  46.467 117.705  1.00 51.93           C
ATOM   1025  C   ALA A 160     -31.140  45.256 117.363  1.00 53.81           C
ATOM   1026  O   ALA A 160     -30.736  44.121 117.612  1.00 57.70           O
ATOM   1027  CB  ALA A 160     -30.743  47.071 119.021  1.00 56.28           C
ATOM   1028  N   ASP A 161     -32.312  45.502 116.779  1.00 52.03           N
ATOM   1029  CA  ASP A 161     -33.213  44.420 116.399  1.00 48.71           C
ATOM   1030  C   ASP A 161     -32.813  43.799 115.066  1.00 46.99           C
ATOM   1031  O   ASP A 161     -32.960  42.603 114.869  1.00 47.02           O
ATOM   1032  CB  ASP A 161     -34.654  44.918 116.321  1.00 54.43           C
ATOM   1033  CG  ASP A 161     -35.135  45.513 117.628  1.00 64.53           C
ATOM   1034  OD1 ASP A 161     -34.756  44.987 118.695  1.00 66.37           O
ATOM   1035  OD2 ASP A 161     -35.905  46.498 117.589  1.00 73.72           O
ATOM   1036  N   TRP A 162     -32.305  44.615 114.151  1.00 42.60           N
ATOM   1037  CA  TRP A 162     -31.864  44.130 112.848  1.00 47.02           C
ATOM   1038  C   TRP A 162     -30.728  43.135 112.995  1.00 52.84           C
ATOM   1039  O   TRP A 162     -30.453  42.347 112.079  1.00 58.41           O
ATOM   1040  CB  TRP A 162     -31.391  45.296 111.996  1.00 45.23           C
ATOM   1041  CG  TRP A 162     -32.495  46.058 111.387  1.00 52.02           C
ATOM   1042  CD1 TRP A 162     -33.829  45.819 111.517  1.00 57.35           C
ATOM   1043  CD2 TRP A 162     -32.365  47.164 110.506  1.00 55.31           C
ATOM   1044  NE1 TRP A 162     -34.542  46.710 110.761  1.00 58.06           N
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ATOM   1045  CE2 TRP A 162     -33.666  47.549 110.127  1.00 54.33           C
ATOM   1046  CE3 TRP A 162     -31.273  47.868 109.992  1.00 57.11           C
ATOM   1047  CZ2 TRP A 162     -33.907  48.610 109.258  1.00 54.11           C
ATOM   1048  CZ3 TRP A 162     -31.509  48.923 109.129  1.00 54.12           C
ATOM   1049  CH2 TRP A 162     -32.819  49.284 108.769  1.00 56.13           C
ATOM   1050  N   GLY A 163     -30.071  43.190 114.153  1.00 50.47           N
ATOM   1051  CA  GLY A 163     -28.960  42.301 114.435  1.00 48.75           C
ATOM   1052  C   GLY A 163     -27.611  42.895 114.074  1.00 48.13           C
ATOM   1053  O   GLY A 163     -26.724  42.194 113.586  1.00 49.04           O
ATOM   1054  N   VAL A 164     -27.452  44.188 114.321  1.00 46.12           N
ATOM   1055  CA  VAL A 164     -26.203  44.862 114.015  1.00 39.85           C
ATOM   1056  C   VAL A 164     -25.140  44.616 115.068  1.00 41.90           C
ATOM   1057  O   VAL A 164     -25.442  44.341 116.231  1.00 48.62           O
ATOM   1058  CB  VAL A 164     -26.404  46.364 113.896  1.00 32.22           C
ATOM   1059  CG1 VAL A 164     -25.117  47.018 113.440  1.00 37.25           C
ATOM   1060  CG2 VAL A 164     -27.540  46.650 112.934  1.00 23.64           C
ATOM   1061  N   ASP A 165     -23.888  44.721 114.650  1.00 40.76           N
ATOM   1062  CA  ASP A 165     -22.779  44.513 115.559  1.00 46.54           C
ATOM   1063  C   ASP A 165     -21.925  45.765 115.675  1.00 47.34           C
ATOM   1064  O   ASP A 165     -21.208  45.941 116.660  1.00 50.94           O
ATOM   1065  CB  ASP A 165     -21.900  43.362 115.074  1.00 43.91           C
ATOM   1066  CG  ASP A 165     -22.657  42.066 114.949  1.00 45.91           C
ATOM   1067  OD1 ASP A 165     -23.265  41.617 115.956  1.00 49.23           O
ATOM   1068  OD2 ASP A 165     -22.632  41.503 113.833  1.00 41.28           O
ATOM   1069  N   LEU A 166     -21.995  46.638 114.678  1.00 41.70           N
ATOM   1070  CA  LEU A 166     -21.184  47.849 114.708  1.00 34.79           C
ATOM   1071  C   LEU A 166     -21.817  49.022 113.966  1.00 29.04           C
ATOM   1072  O   LEU A 166     -22.388  48.849 112.883  1.00 18.18           O
ATOM   1073  CB  LEU A 166     -19.803  47.541 114.120  1.00 34.97           C
ATOM   1074  CG  LEU A 166     -18.748  48.640 113.932  1.00 28.60           C
ATOM   1075  CD1 LEU A 166     -17.429  47.992 113.523  1.00 32.34           C
ATOM   1076  CD2 LEU A 166     -19.198  49.642 112.875  1.00 34.11           C
ATOM   1077  N   LEU A 167     -21.685  50.217 114.545  1.00 29.90           N
ATOM   1078  CA  LEU A 167     -22.242  51.431 113.950  1.00 29.38           C
ATOM   1079  C   LEU A 167     -21.230  52.536 113.652  1.00 30.39           C
ATOM   1080  O   LEU A 167     -20.507  52.980 114.543  1.00 34.52           O
ATOM   1081  CB  LEU A 167     -23.313  52.022 114.865  1.00 29.92           C
ATOM   1082  CG  LEU A 167     -23.849  53.353 114.333  1.00 26.86           C
ATOM   1083  CD1 LEU A 167     -24.617  53.072 113.056  1.00 23.49           C
ATOM   1084  CD2 LEU A 167     -24.741  54.042 115.356  1.00 24.77           C
ATOM   1085  N   LYS A 168     -21.185  52.985 112.404  1.00 31.63           N
ATOM   1086  CA  LYS A 168     -20.294  54.083 112.055  1.00 33.02           C
ATOM   1087  C   LYS A 168     -21.154  55.328 112.122  1.00 34.61           C
ATOM   1088  O   LYS A 168     -21.947  55.583 111.216  1.00 37.40           O
ATOM   1089  CB  LYS A 168     -19.733  53.936 110.631  1.00 36.20           C
ATOM   1090  CG  LYS A 168     -18.885  55.153 110.176  1.00 36.63           C
ATOM   1091  CD  LYS A 168     -18.140  54.939 108.840  1.00 32.72           C
ATOM   1092  CE  LYS A 168     -17.230  56.127 108.494  1.00 17.31           C
ATOM   1093  NZ  LYS A 168     -16.338  55.854 107.338  1.00 20.64           N
ATOM   1094  N   PHE A 169     -21.019  56.097 113.193  1.00 34.82           N
ATOM   1095  CA  PHE A 169     -21.830  57.292 113.320  1.00 43.12           C
ATOM   1096  C   PHE A 169     -21.143  58.538 112.769  1.00 44.70           C
ATOM   1097  O   PHE A 169     -20.330  59.169 113.444  1.00 46.72           O
ATOM   1098  CB  PHE A 169     -22.227  57.498 114.780  1.00 53.78           C
ATOM   1099  CG  PHE A 169     -23.554  58.160 114.946  1.00 66.20           C
ATOM   1100  CD1 PHE A 169     -24.658  57.695 114.241  1.00 71.04           C
ATOM   1101  CD2 PHE A 169     -23.704  59.248 115.793  1.00 69.28           C
ATOM   1102  CE1 PHE A 169     -25.893  58.301 114.373  1.00 73.13           C
ATOM   1103  CE2 PHE A 169     -24.938  59.864 115.936  1.00 74.53           C
ATOM   1104  CZ  PHE A 169     -26.037  59.389 115.223  1.00 75.63           C
ATOM   1105  N   ASP A 170     -21.493  58.886 111.534  1.00 43.70           N
ATOM   1106  CA  ASP A 170     -20.942  60.050 110.834  1.00 43.57           C
ATOM   1107  C   ASP A 170     -21.627  61.342 111.313  1.00 47.05           C
ATOM   1108  O   ASP A 170     -22.725  61.298 111.863  1.00 58.65           O
ATOM   1109  CB  ASP A 170     -21.158  59.870 109.327  1.00 42.08           C
ATOM   1110  CG  ASP A 170     -20.438  60.894 108.510  1.00 47.03           C
ATOM   1111  OD1 ASP A 170     -19.948  61.874 109.086  1.00 39.35           O
ATOM   1112  OD2 ASP A 170     -20.365  60.724 107.282  1.00 60.53           O
ATOM   1113  N   GLY A 171     -20.991  62.490 111.096  1.00 40.64           N
ATOM   1114  CA  GLY A 171     -21.585  63.740 111.533  1.00 40.10           C
ATOM   1115  C   GLY A 171     -21.687  64.883 110.535  1.00 41.45           C
ATOM   1116  O   GLY A 171     -21.069  65.936 110.721  1.00 38.61           O
ATOM   1117  N   CYS A 172     -22.461  64.686 109.474  1.00 45.62           N
ATOM   1118  CA  CYS A 172     -22.662  65.740 108.485  1.00 57.26           C
ATOM   1119  C   CYS A 172     -24.014  66.376 108.765  1.00 64.15           C
ATOM   1120  O   CYS A 172     -24.971  65.671 109.085  1.00 68.98           O
ATOM   1121  CB  CYS A 172     -22.685  65.170 107.064  1.00 63.70           C
ATOM   1122  SG  CYS A 172     -21.108  65.199 106.143  1.00 78.74           S
ATOM   1123  N   TYR A 173     -24.092  67.698 108.666  1.00 65.75           N
ATOM   1124  CA  TYR A 173     -25.359  68.398 108.865  1.00 65.04           C
ATOM   1125  C   TYR A 173     -25.910  68.529 110.289  1.00 70.36           C
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ATOM   1126  O   TYR A 173     -26.614  67.643 110.768  1.00 68.61           O
ATOM   1127  CB  TYR A 173     -26.444  67.742 108.004  1.00 50.88           C
ATOM   1128  CG  TYR A 173     -26.119  67.665 106.530  1.00 40.15           C
ATOM   1129  CD1 TYR A 173     -25.907  68.822 105.783  1.00 44.16           C
ATOM   1130  CD2 TYR A 173     -26.058  66.440 105.874  1.00 37.10           C
ATOM   1131  CE1 TYR A 173     -25.645  68.764 104.416  1.00 35.52           C
ATOM   1132  CE2 TYR A 173     -25.800  66.368 104.507  1.00 32.18           C
ATOM   1133  CZ  TYR A 173     -25.593  67.535 103.778  1.00 30.22           C
ATOM   1134  OH  TYR A 173     -25.336  67.471 102.418  1.00 19.17           O
ATOM   1135  N   CYS A 174     -25.617  69.647 110.950  1.00 78.94           N
ATOM   1136  CA  CYS A 174     -26.119  69.910 112.300  1.00 85.57           C
ATOM   1137  C   CYS A 174     -25.742  71.318 112.742  1.00 94.32           C
ATOM   1138  O   CYS A 174     -24.630  71.778 112.500  1.00103.79           O
ATOM   1139  CB  CYS A 174     -25.584  68.879 113.296  1.00 78.87           C
ATOM   1140  SG  CYS A 174     -23.805  68.720 113.299  1.00 61.30           S
ATOM   1141  N   ASP A 175     -26.684  71.995 113.390  1.00 97.67           N
ATOM   1142  CA  ASP A 175     -26.490  73.365 113.850  1.00103.74           C
ATOM   1143  C   ASP A 175     -25.154  73.614 114.555  1.00103.67           C
ATOM   1144  O   ASP A 175     -24.156  73.933 113.914  1.00101.24           O
ATOM   1145  CB  ASP A 175     -27.653  73.783 114.769  1.00117.72           C
ATOM   1146  CG  ASP A 175     -28.943  74.107 114.002  1.00125.68           C
ATOM   1147  OD1 ASP A 175     -28.928  75.006 113.134  1.00131.47           O
ATOM   1148  OD2 ASP A 175     -29.982  73.472 114.280  1.00135.80           O
ATOM   1149  N   SER A 176     -25.135  73.481 115.875  1.00105.67           N
ATOM   1150  CA  SER A 176     -23.914  73.714 116.637  1.00109.70           C
ATOM   1151  C   SER A 176     -23.466  72.452 117.357  1.00108.65           C
ATOM   1152  O   SER A 176     -24.222  71.481 117.444  1.00105.77           O
ATOM   1153  CB  SER A 176     -24.140  74.827 117.660  1.00116.59           C
ATOM   1154  OG  SER A 176     -25.073  74.427 118.649  1.00127.13           O
ATOM   1155  N   LEU A 177     -22.236  72.466 117.870  1.00109.10           N
ATOM   1156  CA  LEU A 177     -21.706  71.315 118.594  1.00113.27           C
ATOM   1157  C   LEU A 177     -22.719  70.852 119.626  1.00118.00           C
ATOM   1158  O   LEU A 177     -22.741  69.685 120.002  1.00119.05           O
ATOM   1159  CB  LEU A 177     -20.395  71.664 119.289  1.00108.56           C
ATOM   1160  CG  LEU A 177     -19.213  72.035 118.388  1.00108.26           C
ATOM   1161  CD1 LEU A 177     -18.937  73.593 118.503  1.00110.81           C
ATOM   1162  CD2 LEU A 177     -17.984  71.146 118.755  1.00113.74           C
ATOM   1163  N   GLU A 178     -23.551  71.776 120.096  1.00121.90           N
ATOM   1164  CA  GLU A 178     -24.593  71.419 121.053  1.00126.02           C
ATOM   1165  C   GLU A 178     -25.284  70.201 120.449  1.00120.33           C
ATOM   1166  O   GLU A 178     -25.169  69.090 120.966  1.00121.32           O
ATOM   1167  CB  GLU A 178     -25.601  72.571 121.215  1.00138.76           C
ATOM   1168  CG  GLU A 178     -25.076  73.783 121.982  1.00152.42           C
ATOM   1169  CD  GLU A 178     -24.864  73.486 123.456  1.00157.35           C
ATOM   1170  OE1 GLU A 178     -25.854  73.135 124.136  1.00157.22           O
ATOM   1171  OE2 GLU A 178     -23.713  73.603 123.935  1.00160.51           O
ATOM   1172  N   ASN A 179     -25.968  70.409 119.328  1.00110.14           N
ATOM   1173  CA  ASN A 179     -26.658  69.318 118.657  1.00100.76           C
ATOM   1174  C   ASN A 179     -25.709  68.158 118.385  1.00 93.18           C
ATOM   1175  O   ASN A 179     -26.093  66.997 118.519  1.00 92.47           O
ATOM   1176  CB  ASN A 179     -27.270  69.811 117.352  1.00104.39           C
ATOM   1177  CG  ASN A 179     -28.245  70.946 117.569  1.00102.16           C
ATOM   1178  OD1 ASN A 179     -28.886  71.040 118.620  1.00 90.92           O
ATOM   1179  ND2 ASN A 179     -28.381  71.806 116.567  1.00106.80           N
ATOM   1180  N   LEU A 180     -24.469  68.476 118.020  1.00 81.89           N
ATOM   1181  CA  LEU A 180     -23.463  67.453 117.730  1.00 72.86           C
ATOM   1182  C   LEU A 180     -23.087  66.647 118.976  1.00 69.25           C
ATOM   1183  O   LEU A 180     -23.545  65.518 119.161  1.00 71.22           O
ATOM   1184  CB  LEU A 180     -22.204  68.105 117.137  1.00 70.11           C
ATOM   1185  CG  LEU A 180     -21.033  67.185 116.768  1.00 67.68           C
ATOM   1186  CD1 LEU A 180     -21.462  66.225 115.671  1.00 76.29           C
ATOM   1187  CD2 LEU A 180     -19.854  68.017 116.309  1.00 65.37           C
ATOM   1188  N   ALA A 181     -22.245  67.233 119.820  1.00 64.43           N
ATOM   1189  CA  ALA A 181     -21.802  66.577 121.044  1.00 66.82           C
ATOM   1190  C   ALA A 181     -22.922  65.761 121.672  1.00 65.66           C
ATOM   1191  O   ALA A 181     -22.753  64.566 121.912  1.00 68.03           O
ATOM   1192  CB  ALA A 181     -21.291  67.612 122.034  1.00 69.43           C
ATOM   1193  N   ASP A 182     -24.062  66.402 121.926  1.00 62.37           N
ATOM   1194  CA  ASP A 182     -25.206  65.715 122.524  1.00 65.99           C
ATOM   1195  C   ASP A 182     -25.622  64.493 121.719  1.00 65.00           C
ATOM   1196  O   ASP A 182     -25.816  63.412 122.274  1.00 59.17           O
ATOM   1197  CB  ASP A 182     -26.406  66.658 122.656  1.00 73.88           C
ATOM   1198  CG  ASP A 182     -26.334  67.525 123.893  1.00 80.02           C
ATOM   1199  OD1 ASP A 182     -26.076  66.976 124.988  1.00 92.51           O
ATOM   1200  OD2 ASP A 182     -26.547  68.751 123.779  1.00 75.90           O
ATOM   1201  N   GLY A 183     -25.767  64.673 120.409  1.00 66.05           N
ATOM   1202  CA  GLY A 183     -26.156  63.573 119.543  1.00 60.45           C
ATOM   1203  C   GLY A 183     -25.245  62.364 119.683  1.00 54.15           C
ATOM   1204  O   GLY A 183     -25.724  61.242 119.881  1.00 58.09           O
ATOM   1205  N   TYR A 184     -23.933  62.580 119.576  1.00 45.07           N
ATOM   1206  CA  TYR A 184     -22.985  61.485 119.711  1.00 37.39           C
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ATOM   1207  C   TYR A 184     -23.210  60.856 121.067  1.00 34.36           C
ATOM   1208  O   TYR A 184     -23.520  59.670 121.156  1.00 32.57           O
ATOM   1209  CB  TYR A 184     -21.548  61.986 119.596  1.00 31.49           C
ATOM   1210  CG  TYR A 184     -21.003  61.897 118.190  1.00 28.45           C
ATOM   1211  CD1 TYR A 184     -20.770  60.661 117.584  1.00 34.59           C
ATOM   1212  CD2 TYR A 184     -20.758  63.045 117.444  1.00 23.65           C
ATOM   1213  CE1 TYR A 184     -20.306  60.574 116.266  1.00 34.51           C
ATOM   1214  CE2 TYR A 184     -20.296  62.966 116.124  1.00 26.31           C
ATOM   1215  CZ  TYR A 184     -20.074  61.729 115.548  1.00 29.11           C
ATOM   1216  OH  TYR A 184     -19.620  61.660 114.259  1.00 26.35           O
ATOM   1217  N   LYS A 185     -23.074  61.662 122.120  1.00 39.05           N
ATOM   1218  CA  LYS A 185     -23.277  61.193 123.495  1.00 48.75           C
ATOM   1219  C   LYS A 185     -24.603  60.447 123.636  1.00 50.42           C
ATOM   1220  O   LYS A 185     -24.643  59.297 124.074  1.00 50.83           O
ATOM   1221  CB  LYS A 185     -23.276  62.371 124.488  1.00 58.43           C
ATOM   1222  CG  LYS A 185     -21.929  63.073 124.702  1.00 73.82           C
ATOM   1223  CD  LYS A 185     -21.890  63.906 126.010  1.00 82.36           C
ATOM   1224  CE  LYS A 185     -22.888  65.063 126.016  1.00 93.18           C
ATOM   1225  NZ  LYS A 185     -22.795  65.897 127.254  1.00 96.90           N
ATOM   1226  N   HIS A 186     -25.686  61.121 123.263  1.00 52.77           N
ATOM   1227  CA  HIS A 186     -27.025  60.558 123.347  1.00 49.62           C
ATOM   1228  C   HIS A 186     -27.078  59.169 122.737  1.00 41.58           C
ATOM   1229  O   HIS A 186     -27.262  58.180 123.441  1.00 37.23           O
ATOM   1230  CB  HIS A 186     -28.017  61.472 122.634  1.00 54.01           C
ATOM   1231  CG  HIS A 186     -29.447  61.124 122.894  1.00 57.63           C
ATOM   1232  ND1 HIS A 186     -30.497  61.799 122.305  1.00 59.91           N
ATOM   1233  CD2 HIS A 186     -30.007  60.178 123.684  1.00 60.61           C
ATOM   1234  CE1 HIS A 186     -31.638  61.283 122.720  1.00 65.11           C
ATOM   1235  NE2 HIS A 186     -31.369  60.296 123.558  1.00 64.41           N
ATOM   1236  N   MET A 187     -26.919  59.104 121.421  1.00 36.42           N
ATOM   1237  CA  MET A 187     -26.930  57.837 120.702  1.00 37.19           C
ATOM   1238  C   MET A 187     -26.125  56.778 121.468  1.00 39.71           C
ATOM   1239  O   MET A 187     -26.606  55.662 121.703  1.00 43.37           O
ATOM   1240  CB  MET A 187     -26.347  58.050 119.299  1.00 27.48           C
ATOM   1241  CG  MET A 187     -26.191  56.785 118.456  1.00 34.76           C
ATOM   1242  SD  MET A 187     -27.734  55.889 118.163  1.00 36.92           S
ATOM   1243  CE  MET A 187     -28.259  56.613 116.581  1.00 45.04           C
ATOM   1244  N   SER A 188     -24.909  57.149 121.866  1.00 41.71           N
ATOM   1245  CA  SER A 188     -24.017  56.263 122.600  1.00 37.27           C
ATOM   1246  C   SER A 188     -24.764  55.527 123.699  1.00 31.50           C
ATOM   1247  O   SER A 188     -24.648  54.312 123.837  1.00 29.93           O
ATOM   1248  CB  SER A 188     -22.873  57.066 123.205  1.00 39.51           C
ATOM   1249  OG  SER A 188     -21.937  56.205 123.826  1.00 38.33           O
ATOM   1250  N   LEU A 189     -25.537  56.274 124.474  1.00 30.93           N
ATOM   1251  CA  LEU A 189     -26.326  55.706 125.562  1.00 38.86           C
ATOM   1252  C   LEU A 189     -27.498  54.864 125.034  1.00 37.08           C
ATOM   1253  O   LEU A 189     -27.819  53.795 125.578  1.00 34.46           O
ATOM   1254  CB  LEU A 189     -26.871  56.840 126.434  1.00 51.38           C
ATOM   1255  CG  LEU A 189     -25.869  57.868 126.964  1.00 55.89           C
ATOM   1256  CD1 LEU A 189     -26.630  59.095 127.449  1.00 62.91           C
ATOM   1257  CD2 LEU A 189     -25.018  57.255 128.078  1.00 48.77           C
ATOM   1258  N   ALA A 190     -28.136  55.367 123.979  1.00 34.71           N
ATOM   1259  CA  ALA A 190     -29.266  54.689 123.364  1.00 36.52           C
ATOM   1260  C   ALA A 190     -28.897  53.247 123.064  1.00 41.07           C
ATOM   1261  O   ALA A 190     -29.653  52.325 123.367  1.00 45.62           O
ATOM   1262  CB  ALA A 190     -29.662  55.397 122.092  1.00 32.84           C
ATOM   1263  N   LEU A 191     -27.724  53.060 122.473  1.00 41.81           N
ATOM   1264  CA  LEU A 191     -27.240  51.733 122.133  1.00 43.27           C
ATOM   1265  C   LEU A 191     -27.056  50.828 123.359  1.00 45.92           C
ATOM   1266  O   LEU A 191     -27.756  49.827 123.502  1.00 46.02           O
ATOM   1267  CB  LEU A 191     -25.931  51.865 121.354  1.00 38.79           C
ATOM   1268  CG  LEU A 191     -26.052  52.702 120.071  1.00 38.54           C
ATOM   1269  CD1 LEU A 191     -24.669  52.980 119.495  1.00 40.68           C
ATOM   1270  CD2 LEU A 191     -26.916  51.970 119.045  1.00 41.30           C
ATOM   1271  N   ASN A 192     -26.125  51.160 124.245  1.00 50.32           N
ATOM   1272  CA  ASN A 192     -25.933  50.314 125.412  1.00 51.94           C
ATOM   1273  C   ASN A 192     -27.311  49.916 125.898  1.00 51.27           C
ATOM   1274  O   ASN A 192     -27.566  48.751 126.184  1.00 53.27           O
ATOM   1275  CB  ASN A 192     -25.190  51.056 126.523  1.00 51.78           C
ATOM   1276  CG  ASN A 192     -24.865  50.153 127.715  1.00 51.63           C
ATOM   1277  OD1 ASN A 192     -25.766  49.594 128.339  1.00 64.23           O
ATOM   1278  ND2 ASN A 192     -23.574  50.016 128.021  1.00 45.03           N
ATOM   1279  N   ARG A 193     -28.209  50.893 125.945  1.00 55.36           N
ATOM   1280  CA  ARG A 193     -29.565  50.653 126.400  1.00 62.45           C
ATOM   1281  C   ARG A 193     -30.216  49.485 125.669  1.00 55.61           C
ATOM   1282  O   ARG A 193     -30.807  48.608 126.295  1.00 59.33           O
ATOM   1283  CB  ARG A 193     -30.403  51.910 126.207  1.00 73.86           C
ATOM   1284  CG  ARG A 193     -31.760  51.866 126.876  1.00 95.58           C
ATOM   1285  CD  ARG A 193     -32.437  53.194 126.676  1.00110.48           C
ATOM   1286  NE  ARG A 193     -31.459  54.266 126.821  1.00120.92           N
ATOM   1287  CZ  ARG A 193     -31.697  55.547 126.561  1.00125.94           C
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ATOM   1288  NH1 ARG A 193     -32.892  55.935 126.141  1.00130.65           N
ATOM   1289  NH2 ARG A 193     -30.732  56.444 126.713  1.00126.19           N
ATOM   1290  N   THR A 194     -30.100  49.465 124.345  1.00 43.02           N
ATOM   1291  CA  THR A 194     -30.702  48.398 123.546  1.00 36.14           C
ATOM   1292  C   THR A 194     -30.298  47.013 124.034  1.00 32.48           C
ATOM   1293  O   THR A 194     -31.037  46.044 123.835  1.00 29.14           O
ATOM   1294  CB  THR A 194     -30.297  48.485 122.069  1.00 35.70           C
ATOM   1295  OG1 THR A 194     -28.926  48.095 121.938  1.00 35.73           O
ATOM   1296  CG2 THR A 194     -30.475  49.900 121.535  1.00 39.30           C
ATOM   1297  N   GLY A 195     -29.121  46.918 124.652  1.00 30.85           N
ATOM   1298  CA  GLY A 195     -28.651  45.636 125.154  1.00 34.30           C
ATOM   1299  C   GLY A 195     -27.734  44.899 124.193  1.00 36.49           C
ATOM   1300  O   GLY A 195     -26.890  44.100 124.600  1.00 36.19           O
ATOM   1301  N   ARG A 196     -27.905  45.163 122.906  1.00 40.82           N
ATOM   1302  CA  ARG A 196     -27.087  44.538 121.876  1.00 46.67           C
ATOM   1303  C   ARG A 196     -25.670  45.098 122.013  1.00 48.09           C
ATOM   1304  O   ARG A 196     -25.489  46.299 122.195  1.00 54.78           O
ATOM   1305  CB  ARG A 196     -27.673  44.870 120.490  1.00 54.84           C
ATOM   1306  CG  ARG A 196     -26.968  44.253 119.286  1.00 63.61           C
ATOM   1307  CD  ARG A 196     -27.506  42.876 118.919  1.00 72.08           C
ATOM   1308  NE  ARG A 196     -26.709  42.287 117.848  1.00 77.41           N
ATOM   1309  CZ  ARG A 196     -26.723  41.002 117.514  1.00 85.11           C
ATOM   1310  NH1 ARG A 196     -27.499  40.145 118.159  1.00 84.72           N
ATOM   1311  NH2 ARG A 196     -25.936  40.569 116.544  1.00 93.60           N
ATOM   1312  N   SER A 197     -24.667  44.228 121.955  1.00 45.00           N
ATOM   1313  CA  SER A 197     -23.276  44.667 122.050  1.00 44.47           C
ATOM   1314  C   SER A 197     -22.887  45.261 120.692  1.00 50.27           C
ATOM   1315  O   SER A 197     -22.621  44.519 119.740  1.00 55.75           O
ATOM   1316  CB  SER A 197     -22.367  43.478 122.371  1.00 41.44           C
ATOM   1317  OG  SER A 197     -22.822  42.793 123.524  1.00 44.41           O
ATOM   1318  N   ILE A 198     -22.846  46.591 120.603  1.00 49.87           N
ATOM   1319  CA  ILE A 198     -22.519  47.278 119.343  1.00 46.63           C
ATOM   1320  C   ILE A 198     -21.248  48.130 119.359  1.00 41.34           C
ATOM   1321  O   ILE A 198     -21.197  49.145 120.042  1.00 44.43           O
ATOM   1322  CB  ILE A 198     -23.663  48.236 118.911  1.00 47.20           C
ATOM   1323  CG1 ILE A 198     -25.025  47.552 119.043  1.00 45.40           C
ATOM   1324  CG2 ILE A 198     -23.441  48.687 117.481  1.00 47.83           C
ATOM   1325  CD1 ILE A 198     -26.198  48.496 118.835  1.00 31.46           C
ATOM   1326  N   VAL A 199     -20.227  47.744 118.602  1.00 35.54           N
ATOM   1327  CA  VAL A 199     -19.019  48.561 118.560  1.00 33.21           C
ATOM   1328  C   VAL A 199     -19.430  49.899 117.960  1.00 25.97           C
ATOM   1329  O   VAL A 199     -19.899  49.973 116.823  1.00 21.07           O
ATOM   1330  CB  VAL A 199     -17.919  47.949 117.673  1.00 37.47           C
ATOM   1331  CG1 VAL A 199     -16.794  48.968 117.472  1.00 34.52           C
ATOM   1332  CG2 VAL A 199     -17.369  46.686 118.322  1.00 50.88           C
ATOM   1333  N   TYR A 200     -19.242  50.956 118.734  1.00 22.51           N
ATOM   1334  CA  TYR A 200     -19.622  52.293 118.317  1.00 21.72           C
ATOM   1335  C   TYR A 200     -18.416  53.090 117.848  1.00 23.34           C
ATOM   1336  O   TYR A 200     -17.535  53.419 118.652  1.00 19.31           O
ATOM   1337  CB  TYR A 200     -20.287  52.978 119.499  1.00 25.92           C
ATOM   1338  CG  TYR A 200     -20.828  54.353 119.240  1.00 27.65           C
ATOM   1339  CD1 TYR A 200     -21.529  54.641 118.079  1.00 27.17           C
ATOM   1340  CD2 TYR A 200     -20.698  55.355 120.204  1.00 31.21           C
ATOM   1341  CE1 TYR A 200     -22.095  55.900 117.885  1.00 42.25           C
ATOM   1342  CE2 TYR A 200     -21.259  56.613 120.025  1.00 29.28           C
ATOM   1343  CZ  TYR A 200     -21.957  56.885 118.863  1.00 37.99           C
ATOM   1344  OH  TYR A 200     -22.508  58.144 118.692  1.00 31.41           O
ATOM   1345  N   SER A 201     -18.382  53.397 116.548  1.00 28.17           N
ATOM   1346  CA  SER A 201     -17.278  54.157 115.937  1.00 30.84           C
ATOM   1347  C   SER A 201     -17.668  55.572 115.552  1.00 28.96           C
ATOM   1348  O   SER A 201     -18.321  55.796 114.531  1.00 33.52           O
ATOM   1349  CB  SER A 201     -16.743  53.457 114.688  1.00 26.64           C
ATOM   1350  OG  SER A 201     -15.694  54.218 114.117  1.00 30.76           O
ATOM   1351  N   CYS A 202     -17.220  56.524 116.362  1.00 23.89           N
ATOM   1352  CA  CYS A 202     -17.526  57.923 116.149  1.00 21.53           C
ATOM   1353  C   CYS A 202     -16.596  58.634 115.165  1.00 21.15           C
ATOM   1354  O   CYS A 202     -15.539  58.123 114.772  1.00 19.31           O
ATOM   1355  CB  CYS A 202     -17.514  58.632 117.488  1.00 22.65           C
ATOM   1356  SG  CYS A 202     -18.438  57.690 118.743  1.00 42.79           S
ATOM   1357  N   GLU A 203     -17.030  59.822 114.758  1.00 16.28           N
ATOM   1358  CA  GLU A 203     -16.309  60.680 113.816  1.00 12.10           C
ATOM   1359  C   GLU A 203     -16.364  62.067 114.456  1.00  7.30           C
ATOM   1360  O   GLU A 203     -15.940  63.067 113.889  1.00 14.33           O
ATOM   1361  CB  GLU A 203     -17.036  60.667 112.460  1.00  3.31           C
ATOM   1362  CG  GLU A 203     -16.229  61.165 111.289  1.00 17.29           C
ATOM   1363  CD  GLU A 203     -16.838  60.769 109.957  1.00 28.70           C
ATOM   1364  OE1 GLU A 203     -16.898  59.559 109.647  1.00 41.61           O
ATOM   1365  OE2 GLU A 203     -17.272  61.679 109.222  1.00 46.00           O
ATOM   1366  N   TRP A 204     -16.901  62.079 115.669  1.00  3.31           N
ATOM   1367  CA  TRP A 204     -17.071  63.264 116.496  1.00 13.93           C
ATOM   1368  C   TRP A 204     -15.931  64.297 116.392  1.00 20.85           C
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ATOM   1369  O   TRP A 204     -16.138  65.412 115.924  1.00 22.89           O
ATOM   1370  CB  TRP A 204     -17.226  62.796 117.944  1.00 21.92           C
ATOM   1371  CG  TRP A 204     -17.538  63.837 118.967  1.00 21.15           C
ATOM   1372  CD1 TRP A 204     -17.489  65.194 118.820  1.00 20.49           C
ATOM   1373  CD2 TRP A 204     -17.930  63.590 120.328  1.00 20.34           C
ATOM   1374  NE1 TRP A 204     -17.826  65.807 120.010  1.00 20.84           N
ATOM   1375  CE2 TRP A 204     -18.102  64.846 120.948  1.00 25.47           C
ATOM   1376  CE3 TRP A 204     -18.153  62.424 121.082  1.00 15.62           C
ATOM   1377  CZ2 TRP A 204     -18.488  64.974 122.283  1.00 32.99           C
ATOM   1378  CZ3 TRP A 204     -18.538  62.551 122.408  1.00 21.84           C
ATOM   1379  CH2 TRP A 204     -18.702  63.820 122.995  1.00 31.17           C
ATOM   1380  N   PRO A 205     -14.705  63.919 116.799  1.00 27.07           N
ATOM   1381  CA  PRO A 205     -13.530  64.801 116.772  1.00 22.40           C
ATOM   1382  C   PRO A 205     -13.351  65.527 115.454  1.00 12.76           C
ATOM   1383  O   PRO A 205     -13.259  66.750 115.422  1.00  3.31           O
ATOM   1384  CB  PRO A 205     -12.370  63.848 117.031  1.00 32.69           C
ATOM   1385  CG  PRO A 205     -12.998  62.723 117.788  1.00 38.48           C
ATOM   1386  CD  PRO A 205     -14.290  62.529 117.057  1.00 37.95           C
ATOM   1387  N   LEU A 206     -13.273  64.757 114.373  1.00 13.29           N
ATOM   1388  CA  LEU A 206     -13.093  65.309 113.037  1.00 26.78           C
ATOM   1389  C   LEU A 206     -13.978  66.534 112.799  1.00 29.49           C
ATOM   1390  O   LEU A 206     -13.658  67.386 111.968  1.00 31.08           O
ATOM   1391  CB  LEU A 206     -13.408  64.238 111.982  1.00 31.93           C
ATOM   1392  CG  LEU A 206     -13.608  64.726 110.548  1.00 35.55           C
ATOM   1393  CD1 LEU A 206     -12.286  65.202 109.981  1.00 44.15           C
ATOM   1394  CD2 LEU A 206     -14.170  63.613 109.706  1.00 41.86           C
ATOM   1395  N   TYR A 207     -15.087  66.636 113.518  1.00 33.41           N
ATOM   1396  CA  TYR A 207     -15.958  67.769 113.297  1.00 42.82           C
ATOM   1397  C   TYR A 207     -15.765  68.959 114.229  1.00 45.66           C
ATOM   1398  O   TYR A 207     -16.081  70.092 113.854  1.00 38.41           O
ATOM   1399  CB  TYR A 207     -17.392  67.276 113.287  1.00 47.19           C
ATOM   1400  CG  TYR A 207     -17.693  66.544 112.009  1.00 48.83           C
ATOM   1401  CD1 TYR A 207     -17.773  67.236 110.814  1.00 48.74           C
ATOM   1402  CD2 TYR A 207     -17.877  65.161 111.984  1.00 49.99           C
ATOM   1403  CE1 TYR A 207     -18.031  66.582 109.623  1.00 47.79           C
ATOM   1404  CE2 TYR A 207     -18.137  64.494 110.794  1.00 47.50           C
ATOM   1405  CZ  TYR A 207     -18.213  65.219 109.617  1.00 46.58           C
ATOM   1406  OH  TYR A 207     -18.482  64.602 108.418  1.00 52.10           O
ATOM   1407  N   MET A 208     -15.229  68.725 115.426  1.00 54.64           N
ATOM   1408  CA  MET A 208     -14.997  69.824 116.356  1.00 62.16           C
ATOM   1409  C   MET A 208     -13.958  70.772 115.774  1.00 62.53           C
ATOM   1410  O   MET A 208     -14.064  71.980 115.937  1.00 67.29           O
ATOM   1411  CB  MET A 208     -14.528  69.300 117.716  1.00 67.91           C
ATOM   1412  CG  MET A 208     -15.582  68.483 118.445  1.00 61.69           C
ATOM   1413  SD  MET A 208     -15.311  68.428 120.219  1.00 56.66           S
ATOM   1414  CE  MET A 208     -15.639  70.115 120.650  1.00 59.92           C
ATOM   1415  N   TRP A 209     -12.951  70.223 115.102  1.00 57.06           N
ATOM   1416  CA  TRP A 209     -11.937  71.057 114.492  1.00 56.77           C
ATOM   1417  C   TRP A 209     -12.627  71.785 113.353  1.00 65.26           C
ATOM   1418  O   TRP A 209     -13.511  71.236 112.705  1.00 63.65           O
ATOM   1419  CB  TRP A 209     -10.809  70.205 113.898  1.00 58.79           C
ATOM   1420  CG  TRP A 209     -10.199  69.256 114.863  1.00 63.98           C
ATOM   1421  CD1 TRP A 209     -10.758  68.117 115.351  1.00 68.80           C
ATOM   1422  CD2 TRP A 209      -8.923  69.384 115.503  1.00 69.51           C
ATOM   1423  NE1 TRP A 209      -9.915  67.524 116.259  1.00 75.45           N
ATOM   1424  CE2 TRP A 209      -8.780  68.281 116.372  1.00 73.01           C
ATOM   1425  CE3 TRP A 209      -7.886  70.324 115.427  1.00 77.58           C
ATOM   1426  CZ2 TRP A 209      -7.642  68.091 117.166  1.00 77.64           C
ATOM   1427  CZ3 TRP A 209      -6.752  70.134 116.219  1.00 81.84           C
ATOM   1428  CH2 TRP A 209      -6.643  69.024 117.076  1.00 79.91           C
ATOM   1429  N   PRO A 210     -12.286  73.057 113.133  1.00 77.49           N
ATOM   1430  CA  PRO A 210     -11.268  73.837 113.844  1.00 83.21           C
ATOM   1431  C   PRO A 210     -11.939  74.940 114.688  1.00 79.01           C
ATOM   1432  O   PRO A 210     -11.673  76.139 114.516  1.00 75.34           O
ATOM   1433  CB  PRO A 210     -10.420  74.399 112.721  1.00 90.90           C
ATOM   1434  CG  PRO A 210     -11.471  74.755 111.704  1.00 92.14           C
ATOM   1435  CD  PRO A 210     -12.462  73.592 111.761  1.00 83.73           C
ATOM   1436  N   PHE A 211     -12.815  74.512 115.590  1.00 76.58           N
ATOM   1437  CA  PHE A 211     -13.545  75.420 116.468  1.00 73.52           C
ATOM   1438  C   PHE A 211     -12.979  75.306 117.878  1.00 74.63           C
ATOM   1439  O   PHE A 211     -12.983  76.273 118.642  1.00 77.50           O
ATOM   1440  CB  PHE A 211     -15.029  75.056 116.446  1.00 69.72           C
ATOM   1441  CG  PHE A 211     -15.570  74.891 115.059  1.00 67.85           C
ATOM   1442  CD1 PHE A 211     -15.525  75.948 114.158  1.00 66.48           C
ATOM   1443  CD2 PHE A 211     -16.054  73.664 114.624  1.00 68.57           C
ATOM   1444  CE1 PHE A 211     -15.946  75.780 112.855  1.00 63.01           C
ATOM   1445  CE2 PHE A 211     -16.478  73.494 113.310  1.00 66.32           C
ATOM   1446  CZ  PHE A 211     -16.420  74.556 112.431  1.00 58.64           C
ATOM   1447  N   GLN A 212     -12.485  74.122 118.216  1.00 73.94           N
ATOM   1448  CA  GLN A 212     -11.889  73.900 119.516  1.00 72.71           C
ATOM   1449  C   GLN A 212     -11.416  72.470 119.643  1.00 67.26           C
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ATOM   1450  O   GLN A 212     -12.089  71.534 119.197  1.00 66.79           O
ATOM   1451  CB  GLN A 212     -12.874  74.241 120.638  1.00 82.79           C
ATOM   1452  CG  GLN A 212     -14.246  73.590 120.537  1.00 94.62           C
ATOM   1453  CD  GLN A 212     -15.224  74.107 121.597  1.00101.94           C
ATOM   1454  OE1 GLN A 212     -15.575  75.280 121.596  1.00107.83           O
ATOM   1455  NE2 GLN A 212     -15.648  73.235 122.508  1.00101.67           N
ATOM   1456  N   LYS A 213     -10.241  72.313 120.235  1.00 66.10           N
ATOM   1457  CA  LYS A 213      -9.673  71.002 120.431  1.00 72.81           C
ATOM   1458  C   LYS A 213     -10.686  70.246 121.291  1.00 67.35           C
ATOM   1459  O   LYS A 213     -11.203  70.780 122.264  1.00 68.84           O
ATOM   1460  CB  LYS A 213      -8.321  71.121 121.147  1.00 86.07           C
ATOM   1461  CG  LYS A 213      -7.531  72.359 120.742  1.00100.84           C
ATOM   1462  CD  LYS A 213      -8.194  73.597 121.312  1.00110.24           C
ATOM   1463  CE  LYS A 213      -7.474  74.868 120.947  1.00115.97           C
ATOM   1464  NZ  LYS A 213      -8.130  76.003 121.647  1.00113.67           N
ATOM   1465  N   PRO A 214     -10.992  68.994 120.925  1.00 63.52           N
ATOM   1466  CA  PRO A 214     -11.951  68.140 121.643  1.00 65.13           C
ATOM   1467  C   PRO A 214     -11.464  67.635 122.998  1.00 64.40           C
ATOM   1468  O   PRO A 214     -10.277  67.648 123.269  1.00 66.33           O
ATOM   1469  CB  PRO A 214     -12.171  66.984 120.666  1.00 72.41           C
ATOM   1470  CG  PRO A 214     -11.718  67.518 119.322  1.00 65.19           C
ATOM   1471  CD  PRO A 214     -10.519  68.333 119.694  1.00 61.91           C
ATOM   1472  N   ASN A 215     -12.387  67.220 123.854  1.00 65.67           N
ATOM   1473  CA  ASN A 215     -11.989  66.670 125.138  1.00 67.56           C
ATOM   1474  C   ASN A 215     -11.969  65.171 124.904  1.00 62.72           C
ATOM   1475  O   ASN A 215     -12.946  64.479 125.173  1.00 59.58           O
ATOM   1476  CB  ASN A 215     -12.998  67.014 126.235  1.00 81.52           C
ATOM   1477  CG  ASN A 215     -12.635  66.389 127.567  1.00 93.94           C
ATOM   1478  OD1 ASN A 215     -11.640  65.666 127.656  1.00 97.55           O
ATOM   1479  ND2 ASN A 215     -13.421  66.667 128.608  1.00106.11           N
ATOM   1480  N   TYR A 216     -10.852  64.681 124.381  1.00 58.40           N
ATOM   1481  CA  TYR A 216     -10.702  63.267 124.061  1.00 51.54           C
ATOM   1482  C   TYR A 216     -11.016  62.331 125.217  1.00 52.52           C
ATOM   1483  O   TYR A 216     -11.460  61.197 125.006  1.00 46.44           O
ATOM   1484  CB  TYR A 216      -9.285  62.987 123.556  1.00 43.79           C
ATOM   1485  CG  TYR A 216      -9.029  63.400 122.122  1.00 33.73           C
ATOM   1486  CD1 TYR A 216      -9.687  62.772 121.064  1.00 33.94           C
ATOM   1487  CD2 TYR A 216      -8.116  64.415 121.814  1.00 28.64           C
ATOM   1488  CE1 TYR A 216      -9.439  63.146 119.726  1.00 22.17           C
ATOM   1489  CE2 TYR A 216      -7.868  64.795 120.477  1.00 22.68           C
ATOM   1490  CZ  TYR A 216      -8.533  64.156 119.440  1.00 19.76           C
ATOM   1491  OH  TYR A 216      -8.293  64.523 118.125  1.00 20.60           O
ATOM   1492  N   THR A 217     -10.769  62.788 126.440  1.00 51.36           N
ATOM   1493  CA  THR A 217     -11.046  61.952 127.603  1.00 50.03           C
ATOM   1494  C   THR A 217     -12.546  61.764 127.630  1.00 49.02           C
ATOM   1495  O   THR A 217     -13.045  60.706 128.003  1.00 56.07           O
ATOM   1496  CB  THR A 217     -10.591  62.623 128.909  1.00 51.67           C
ATOM   1497  OG1 THR A 217      -9.252  63.112 128.750  1.00 59.45           O
ATOM   1498  CG2 THR A 217     -10.606  61.618 130.053  1.00 50.17           C
ATOM   1499  N   GLU A 218     -13.251  62.810 127.217  1.00 44.02           N
ATOM   1500  CA  GLU A 218     -14.702  62.804 127.151  1.00 38.09           C
ATOM   1501  C   GLU A 218     -15.095  61.779 126.101  1.00 30.35           C
ATOM   1502  O   GLU A 218     -15.626  60.714 126.408  1.00 31.42           O
ATOM   1503  CB  GLU A 218     -15.182  64.196 126.747  1.00 45.80           C
ATOM   1504  CG  GLU A 218     -16.669  64.351 126.544  1.00 56.73           C
ATOM   1505  CD  GLU A 218     -17.145  65.729 126.966  1.00 62.81           C
ATOM   1506  OE1 GLU A 218     -17.061  66.034 128.180  1.00 64.60           O
ATOM   1507  OE2 GLU A 218     -17.591  66.506 126.093  1.00 51.07           O
ATOM   1508  N   ILE A 219     -14.804  62.116 124.854  1.00 20.92           N
ATOM   1509  CA  ILE A 219     -15.092  61.260 123.711  1.00 16.81           C
ATOM   1510  C   ILE A 219     -14.830  59.784 123.978  1.00 19.92           C
ATOM   1511  O   ILE A 219     -15.674  58.938 123.685  1.00 26.14           O
ATOM   1512  CB  ILE A 219     -14.233  61.659 122.517  1.00 18.69           C
ATOM   1513  CG1 ILE A 219     -14.460  63.136 122.189  1.00 28.40           C
ATOM   1514  CG2 ILE A 219     -14.546  60.759 121.343  1.00  3.31           C
ATOM   1515  CD1 ILE A 219     -13.861  63.582 120.873  1.00 35.19           C
ATOM   1516  N   ARG A 220     -13.645  59.488 124.511  1.00 22.71           N
ATOM   1517  CA  ARG A 220     -13.250  58.121 124.815  1.00 32.74           C
ATOM   1518  C   ARG A 220     -14.251  57.426 125.723  1.00 36.46           C
ATOM   1519  O   ARG A 220     -14.291  56.202 125.778  1.00 41.29           O
ATOM   1520  CB  ARG A 220     -11.862  58.100 125.458  1.00 34.29           C
ATOM   1521  CG  ARG A 220     -11.602  56.838 126.251  1.00 44.46           C
ATOM   1522  CD  ARG A 220     -10.137  56.579 126.435  1.00 58.36           C
ATOM   1523  NE  ARG A 220      -9.873  55.151 126.320  1.00 81.14           N
ATOM   1524  CZ  ARG A 220      -8.660  54.612 126.325  1.00 95.08           C
ATOM   1525  NH1 ARG A 220      -7.589  55.383 126.442  1.00100.76           N
ATOM   1526  NH2 ARG A 220      -8.519  53.300 126.202  1.00102.37           N
ATOM   1527  N   GLN A 221     -15.054  58.205 126.441  1.00 38.90           N
ATOM   1528  CA  GLN A 221     -16.063  57.643 127.334  1.00 44.66           C
ATOM   1529  C   GLN A 221     -17.346  57.461 126.563  1.00 42.86           C
ATOM   1530  O   GLN A 221     -18.404  57.257 127.147  1.00 46.12           O
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ATOM   1531  CB  GLN A 221     -16.354  58.583 128.493  1.00 51.89           C
ATOM   1532  CG  GLN A 221     -15.174  58.935 129.342  1.00 68.94           C
ATOM   1533  CD  GLN A 221     -15.591  59.700 130.569  1.00 74.55           C
ATOM   1534  OE1 GLN A 221     -16.235  60.746 130.476  1.00 78.39           O
ATOM   1535  NE2 GLN A 221     -15.230  59.182 131.733  1.00 80.79           N
ATOM   1536  N   TYR A 222     -17.247  57.542 125.244  1.00 45.18           N
ATOM   1537  CA  TYR A 222     -18.415  57.416 124.389  1.00 48.79           C
ATOM   1538  C   TYR A 222     -18.160  56.677 123.082  1.00 50.19           C
ATOM   1539  O   TYR A 222     -19.099  56.411 122.326  1.00 52.15           O
ATOM   1540  CB  TYR A 222     -18.957  58.805 124.062  1.00 46.63           C
ATOM   1541  CG  TYR A 222     -19.687  59.469 125.197  1.00 54.32           C
ATOM   1542  CD1 TYR A 222     -20.824  58.885 125.751  1.00 63.31           C
ATOM   1543  CD2 TYR A 222     -19.280  60.707 125.680  1.00 63.38           C
ATOM   1544  CE1 TYR A 222     -21.540  59.521 126.747  1.00 65.52           C
ATOM   1545  CE2 TYR A 222     -19.990  61.353 126.681  1.00 68.64           C
ATOM   1546  CZ  TYR A 222     -21.120  60.756 127.205  1.00 64.38           C
ATOM   1547  OH  TYR A 222     -21.847  61.409 128.164  1.00 59.66           O
ATOM   1548  N   CYS A 223     -16.905  56.341 122.806  1.00 47.24           N
ATOM   1549  CA  CYS A 223     -16.600  55.672 121.555  1.00 43.05           C
ATOM   1550  C   CYS A 223     -15.539  54.605 121.640  1.00 43.74           C
ATOM   1551  O   CYS A 223     -14.649  54.652 122.490  1.00 48.31           O
ATOM   1552  CB  CYS A 223     -16.183  56.714 120.538  1.00 39.27           C
ATOM   1553  SG  CYS A 223     -17.410  58.054 120.464  1.00 34.96           S
ATOM   1554  N   ASN A 224     -15.644  53.636 120.741  1.00 38.10           N
ATOM   1555  CA  ASN A 224     -14.684  52.552 120.681  1.00 33.51           C
ATOM   1556  C   ASN A 224     -13.505  53.023 119.840  1.00 31.77           C
ATOM   1557  O   ASN A 224     -12.395  52.498 119.939  1.00 33.20           O
ATOM   1558  CB  ASN A 224     -15.367  51.323 120.104  1.00 35.64           C
ATOM   1559  CG  ASN A 224     -16.398  50.759 121.056  1.00 35.91           C
ATOM   1560  OD1 ASN A 224     -17.510  50.428 120.665  1.00 32.93           O
ATOM   1561  ND2 ASN A 224     -16.026  50.646 122.323  1.00 23.40           N
ATOM   1562  N   HIS A 225     -13.772  54.029 119.014  1.00 33.52           N
ATOM   1563  CA  HIS A 225     -12.771  54.677 118.177  1.00 37.53           C
ATOM   1564  C   HIS A 225     -13.418  55.766 117.343  1.00 40.70           C
ATOM   1565  O   HIS A 225     -14.551  55.649 116.892  1.00 48.21           O
ATOM   1566  CB  HIS A 225     -11.966  53.679 117.322  1.00 37.41           C
ATOM   1567  CG  HIS A 225     -12.763  52.542 116.770  1.00 35.26           C
ATOM   1568  ND1 HIS A 225     -13.722  52.703 115.793  1.00 34.57           N
ATOM   1569  CD2 HIS A 225     -12.696  51.214 117.019  1.00 31.85           C
ATOM   1570  CE1 HIS A 225     -14.208  51.521 115.464  1.00 26.70           C
ATOM   1571  NE2 HIS A 225     -13.602  50.601 116.193  1.00 27.50           N
ATOM   1572  N   TRP A 226     -12.665  56.839 117.166  1.00 40.42           N
ATOM   1573  CA  TRP A 226     -13.114  58.039 116.477  1.00 36.10           C
ATOM   1574  C   TRP A 226     -12.185  58.503 115.343  1.00 34.31           C
ATOM   1575  O   TRP A 226     -10.994  58.189 115.340  1.00 37.97           O
ATOM   1576  CB  TRP A 226     -13.201  59.127 117.530  1.00 26.81           C
ATOM   1577  CG  TRP A 226     -11.949  59.110 118.387  1.00 31.92           C
ATOM   1578  CD1 TRP A 226     -10.738  59.675 118.081  1.00 35.48           C
ATOM   1579  CD2 TRP A 226     -11.746  58.383 119.613  1.00 33.48           C
ATOM   1580  NE1 TRP A 226      -9.802  59.344 119.032  1.00 31.17           N
ATOM   1581  CE2 TRP A 226     -10.394  58.556 119.984  1.00 30.89           C
ATOM   1582  CE3 TRP A 226     -12.575  57.607 120.433  1.00 35.17           C
ATOM   1583  CZ2 TRP A 226      -9.850  57.972 121.132  1.00 27.64           C
ATOM   1584  CZ3 TRP A 226     -12.030  57.027 121.576  1.00 35.04           C
ATOM   1585  CH2 TRP A 226     -10.681  57.219 121.914  1.00 28.55           C
ATOM   1586  N   ARG A 227     -12.735  59.254 114.389  1.00 27.57           N
ATOM   1587  CA  ARG A 227     -11.955  59.790 113.273  1.00 30.76           C
ATOM   1588  C   ARG A 227     -11.303  61.097 113.696  1.00 35.75           C
ATOM   1589  O   ARG A 227     -11.854  61.822 114.511  1.00 36.24           O
ATOM   1590  CB  ARG A 227     -12.861  60.057 112.080  1.00 32.55           C
ATOM   1591  CG  ARG A 227     -13.215  58.830 111.283  1.00 33.73           C
ATOM   1592  CD  ARG A 227     -12.012  58.339 110.509  1.00 40.53           C
ATOM   1593  NE  ARG A 227     -11.628  59.262 109.450  1.00 31.33           N
ATOM   1594  CZ  ARG A 227     -12.398  59.555 108.410  1.00 37.34           C
ATOM   1595  NH1 ARG A 227     -13.593  58.999 108.294  1.00 30.72           N
ATOM   1596  NH2 ARG A 227     -11.970  60.395 107.481  1.00 45.28           N
ATOM   1597  N   ASN A 228     -10.137  61.406 113.145  1.00 34.78           N
ATOM   1598  CA  ASN A 228      -9.447  62.639 113.505  1.00 35.77           C
ATOM   1599  C   ASN A 228      -9.193  63.528 112.311  1.00 39.43           C
ATOM   1600  O   ASN A 228      -9.435  64.727 112.351  1.00 40.12           O
ATOM   1601  CB  ASN A 228      -8.099  62.344 114.176  1.00 43.19           C
ATOM   1602  CG  ASN A 228      -8.245  61.660 115.525  1.00 56.29           C
ATOM   1603  OD1 ASN A 228      -9.082  62.038 116.342  1.00 56.53           O
ATOM   1604  ND2 ASN A 228      -7.413  60.654 115.769  1.00 66.96           N
ATOM   1605  N   PHE A 229      -8.699  62.929 111.241  1.00 45.11           N
ATOM   1606  CA  PHE A 229      -8.377  63.681 110.038  1.00 42.74           C
ATOM   1607  C   PHE A 229      -9.375  63.406 108.920  1.00 37.97           C
ATOM   1608  O   PHE A 229     -10.218  62.516 109.034  1.00 31.13           O
ATOM   1609  CB  PHE A 229      -6.964  63.315 109.571  1.00 38.01           C
ATOM   1610  CG  PHE A 229      -6.359  64.315 108.641  1.00 31.14           C
ATOM   1611  CD1 PHE A 229      -6.097  65.610 109.077  1.00 29.66           C
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ATOM   1612  CD2 PHE A 229.      -6.081  63.973 107.319  1.00 38.07           C
ATOM   1613  CE1 PHE A 229      -5.568  66.552 108.212  1.00 45.65           C
ATOM   1614  CE2 PHE A 229      -5.553  64.906 106.440  1.00 39.87           C
ATOM   1615  CZ  PHE A 229      -5.297  66.201 106.886  1.00 44.87           C
ATOM   1616  N   ALA A 230      -9.266  64.176 107.841  1.00 40.67           N
ATOM   1617  CA  ALA A 230     -10.136  64.037 106.673  1.00 45.66           C
ATOM   1618  C   ALA A 230     -10.186  62.599 106.153  1.00 43.65           C
ATOM   1619  O   ALA A 230      -9.459  61.738 106.645  1.00 40.62           O
ATOM   1620  CB  ALA A 230      -9.643  64.961 105.563  1.00 50.69           C
ATOM   1621  N   ASP A 231     -11.044  62.336 105.166  1.00 45.95           N
ATOM   1622  CA  ASP A 231     -11.106  60.995 104.594  1.00 46.27           C
ATOM   1623  C   ASP A 231      -9.771  60.655 103.974  1.00 39.23           C
ATOM   1624  O   ASP A 231      -8.800  61.402 104.111  1.00 47.23           O
ATOM   1625  CB  ASP A 231     -12.164  60.888 103.523  1.00 57.49           C
ATOM   1626  CG  ASP A 231     -13.526  60.822 104.092  1.00 65.88           C
ATOM   1627  OD1 ASP A 231     -13.665  60.206 105.166  1.00 69.45           O
ATOM   1628  OD2 ASP A 231     -14.455  61.372 103.466  1.00 71.23           O
ATOM   1629  N   ILE A 232      -9.721  59.540 103.265  1.00 24.74           N
ATOM   1630  CA  ILE A 232      -8.466  59.128 102.678  1.00 24.77           C
ATOM   1631  C   ILE A 232      -8.611  58.666 101.230  1.00 33.28           C
ATOM   1632  O   ILE A 232      -9.423  57.789 100.935  1.00 40.10           O
ATOM   1633  CB  ILE A 232      -7.837  58.019 103.561  1.00 25.18           C
ATOM   1634  CG1 ILE A 232      -6.497  57.550 102.984  1.00 18.54           C
ATOM   1635  CG2 ILE A 232      -8.824  56.876 103.709  1.00 33.13           C
ATOM   1636  CD1 ILE A 232      -5.676  56.721 103.976  1.00 18.15           C
ATOM   1637  N   ASP A 233      -7.826  59.283 100.339  1.00 40.33           N
ATOM   1638  CA  ASP A 233      -7.814  58.967  98.907  1.00 38.66           C
ATOM   1639  C   ASP A 233      -6.932  57.755  98.685  1.00 33.49           C
ATOM   1640  O   ASP A 233      -6.180  57.368  99.558  1.00 41.14           O
ATOM   1641  CB  ASP A 233      -7.191  60.106  98.088  1.00 49.03           C
ATOM   1642  CG  ASP A 233      -7.943  61.412  98.204  1.00 69.46           C
ATOM   1643  OD1 ASP A 233      -9.109  61.479  97.753  1.00 80.91           O
ATOM   1644  OD2 ASP A 233      -7.349  62.372  98.745  1.00 76.24           O
ATOM   1645  N   ASP A 234      -7.012  57.157  97.510  1.00 27.40           N
ATOM   1646  CA  ASP A 234      -6.143  56.037  97.208  1.00 28.65           C
ATOM   1647  C   ASP A 234      -4.904  56.746  96.662  1.00 29.50           C
ATOM   1648  O   ASP A 234      -4.595  56.662  95.462  1.00 28.14           O
ATOM   1649  CB  ASP A 234      -6.777  55.147  96.141  1.00 31.14           C
ATOM   1650  CG  ASP A 234      -5.995  53.879  95.922  1.00 35.74           C
ATOM   1651  OD1 ASP A 234      -5.181  53.528  96.808  1.00 33.60           O
ATOM   1652  OD2 ASP A 234      -6.196  53.219  94.884  1.00 38.85           O
ATOM   1653  N   SER A 235      -4.213  57.458  97.556  1.00 27.77           N
ATOM   1654  CA  SER A 235      -3.032  58.242  97.187  1.00 27.25           C
ATOM   1655  C   SER A 235      -1.960  58.300  98.253  1.00 24.27           C
ATOM   1656  O   SER A 235      -2.235  58.128  99.444  1.00 20.06           O
ATOM   1657  CB  SER A 235      -3.457  59.674  96.880  1.00 36.86           C
ATOM   1658  OG  SER A 235      -4.172  60.234  97.980  1.00 27.30           O
ATOM   1659  N   TRP A 236      -0.733  58.573  97.831  1.00 19.59           N
ATOM   1660  CA  TRP A 236       0.365  58.683  98.787  1.00 22.03           C
ATOM   1661  C   TRP A 236       0.169  59.972  99.601  1.00 23.19           C
ATOM   1662  O   TRP A 236       0.300  59.981 100.834  1.00 27.64           O
ATOM   1663  CB  TRP A 236       1.698  58.719  98.041  1.00 23.81           C
ATOM   1664  CG  TRP A 236       2.952  58.843  98.887  1.00 15.41           C
ATOM   1665  CD1 TRP A 236       4.090  59.515  98.548  1.00 14.82           C
ATOM   1666  CD2 TRP A 236       3.206  58.260 100.180  1.00 20.27           C
ATOM   1667  NE1 TRP A 236       5.031  59.391  99.538  1.00 13.94           N
ATOM   1668  CE2 TRP A 236       4.519  58.627 100.552  1.00 16.04           C
ATOM   1669  CE3 TRP A 236       2.454  57.465 101.056  1.00 31.69           C
ATOM   1670  CZ2 TRP A 236       5.098  58.230 101.761  1.00 12.53           C
ATOM   1671  CZ3 TRP A 236       3.034  57.066 102.266  1.00 29.69           C
ATOM   1672  CH2 TRP A 236       4.345  57.452 102.602  1.00 25.33           C
ATOM   1673  N   LYS A 237      -0.167  61.053  98.902  1.00 25.83           N
ATOM   1674  CA  LYS A 237      -0.396  62.347  99.532  1.00 34.83           C
ATOM   1675  C   LYS A 237      -1.338  62.218 100.724  1.00 40.41           C
ATOM   1676  O   LYS A 237      -0.959  62.489 101.866  1.00 44.29           O
ATOM   1677  CB  LYS A 237      -0.990  63.316  98.517  1.00 41.22           C
ATOM   1678  CG  LYS A 237      -1.285  64.702  99.054  1.00 50.27           C
ATOM   1679  CD  LYS A 237      -1.854  65.592  97.958  1.00 66.37           C
ATOM   1680  CE  LYS A 237      -2.078  67.010  98.448  1.00 75.77           C
ATOM   1681  NZ  LYS A 237      -2.520  67.895  97.341  1.00 85.31           N
ATOM   1682  N   SER A 238      -2.565  61.793 100.454  1.00 47.13           N
ATOM   1683  CA  SER A 238      -3.561  61.625 101.496  1.00 49.36           C
ATOM   1684  C   SER A 238      -2.979  60.909 102.716  1.00 41.87           C
ATOM   1685  O   SER A 238      -3.281  61.251 103.865  1.00 43.11           O
ATOM   1686  CB  SER A 238      -4.733  60.827 100.954  1.00 58.97           C
ATOM   1687  OG  SER A 238      -5.767  60.730 101.922  1.00 69.91           O
ATOM   1688  N   ILE A 239      -2.130  59.919 102.478  1.00 28.63           N
ATOM   1689  CA  ILE A 239      -1.538  59.205 103.596  1.00 25.25           C
ATOM   1690  C   ILE A 239      -0.518  60.068 104.307  1.00 21.50           C
ATOM   1691  O   ILE A 239      -0.537  60.181 105.535  1.00 16.28           O
ATOM   1692  CB  ILE A 239      -0.905  57.882 103.129  1.00 22.82           C
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ATOM   1693  CG1 ILE A 239      -2.004  56.813 103.085  1.00 30.64           C
ATOM   1694  CG2 ILE A 239       0.247  57.481 104.031  1.00 18.42           C
ATOM   1695  CD1 ILE A 239      -1.507  55.390 103.020  1.00 32.95           C
ATOM   1696  N   LYS A 240       0.370  60.683 103.539  1.00 20.19           N
ATOM   1697  CA  LYS A 240       1.387  61.533 104.128  1.00 27.65           C
ATOM   1698  C   LYS A 240       0.753  62.543 105.075  1.00 35.03           C
ATOM   1699  O   LYS A 240       1.134  62.633 106.249  1.00 40.16           O
ATOM   1700  CB  LYS A 240       2.158  62.242 103.025  1.00 36.93           C
ATOM   1701  CG  LYS A 240       2.846  61.288 102.068  1.00 41.89           C
ATOM   1702  CD  LYS A 240       3.361  62.019 100.851  1.00 50.69           C
ATOM   1703  CE  LYS A 240       4.362  63.097 101.229  1.00 56.56           C
ATOM   1704  NZ  LYS A 240       4.883  63.829 100.039  1.00 68.08           N
ATOM   1705  N   SER A 241      -0.230  63.284 104.577  1.00 32.20           N
ATOM   1706  CA  SER A 241      -0.901  64.278 105.406  1.00 33.89           C
ATOM   1707  C   SER A 241      -1.413  63.692 106.731  1.00 30.55           C
ATOM   1708  O   SER A 241      -1.210  64.290 107.792  1.00 22.28           O
ATOM   1709  CB  SER A 241      -2.050  64.932 104.628  1.00 38.13           C
ATOM   1710  OG  SER A 241      -3.005  63.982 104.200  1.00 52.37           O
ATOM   1711  N   ILE A 242      -2.063  62.529 106.673  1.00 25.28           N
ATOM   1712  CA  ILE A 242      -2.581  61.888 107.884  1.00 21.26           C
ATOM   1713  C   ILE A 242      -1.444  61.603 108.880  1.00 25.16           C
ATOM   1714  O   ILE A 242      -1.552  61.896 110.084  1.00 25.43           O
ATOM   1715  CB  ILE A 242      -3.348  60.569 107.546  1.00 14.21           C
ATOM   1716  CG1 ILE A 242      -4.794  60.893 107.175  1.00 17.53           C
ATOM   1717  CG2 ILE A 242      -3.336  59.615 108.730  1.00 13.13           C
ATOM   1718  CD1 ILE A 242      -5.648  59.668 106.946  1.00 19.53           C
ATOM   1719  N   LEU A 243      -0.350  61.033 108.392  1.00 18.34           N
ATOM   1720  CA  LEU A 243       0.760  60.779 109.284  1.00 10.66           C
ATOM   1721  C   LEU A 243       1.168  62.133 109.817  1.00 19.50           C
ATOM   1722  O   LEU A 243       1.044  62.404 111.015  1.00 21.45           O
ATOM   1723  CB  LEU A 243       1.919  60.159 108.527  1.00 12.02           C
ATOM   1724  CG  LEU A 243       1.811  58.654 108.356  1.00  7.19           C
ATOM   1725  CD1 LEU A 243       2.998  58.195 107.559  1.00  3.85           C
ATOM   1726  CD2 LEU A 243       1.785  57.975 109.709  1.00 13.48           C
ATOM   1727  N   ASP A 244       1.628  62.979 108.893  1.00 17.56           N
ATOM   1728  CA  ASP A 244       2.071  64.329 109.210  1.00 19.63           C
ATOM   1729  C   ASP A 244       1.179  64.987 110.247  1.00 20.63           C
ATOM   1730  O   ASP A 244       1.625  65.813 111.053  1.00 17.63           O
ATOM   1731  CB  ASP A 244       2.078  65.194 107.957  1.00 24.06           C
ATOM   1732  CG  ASP A 244       3.213  64.850 107.017  1.00 30.13           C
ATOM   1733  OD1 ASP A 244       4.343  64.624 107.499  1.00 37.52           O
ATOM   1734  OD2 ASP A 244       2.999  64.832 105.787  1.00 30.05           O
ATOM   1735  N   TRP A 245      -0.091  64.615 110.207  1.00 14.39           N
ATOM   1736  CA  TRP A 245      -1.068  65.168 111.111  1.00 13.88           C
ATOM   1737  C   TRP A 245      -1.029  64.455 112.452  1.00 16.86           C
ATOM   1738  O   TRP A 245      -0.912  65.091 113.506  1.00 20.50           O
ATOM   1739  CB  TRP A 245      -2.457  65.056 110.493  1.00 17.62           C
ATOM   1740  CG  TRP A 245      -3.462  65.705 111.336  1.00 34.54           C
ATOM   1741  CD1 TRP A 245      -3.851  67.017 111.293  1.00 41.20           C
ATOM   1742  CD2 TRP A 245      -4.130  65.118 112.458  1.00 31.61           C
ATOM   1743  NE1 TRP A 245      -4.718  67.283 112.329  1.00 47.44           N
ATOM   1744  CE2 TRP A 245      -4.905  66.135 113.060  1.00 34.63           C
ATOM   1745  CE3 TRP A 245      -4.145  63.828 113.018  1.00 31.06           C
ATOM   1746  CZ2 TRP A 245      -5.690  65.902 114.200  1.00 35.09           C
ATOM   1747  CZ3 TRP A 245      -4.925  63.597 114.147  1.00 36.08           C
ATOM   1748  CH2 TRP A 245      -5.686  64.630 114.726  1.00 37.13           C
ATOM   1749  N   THR A 246      -1.136  63.134 112.415  1.00 17.45           N
ATOM   1750  CA  THR A 246      -1.097  62.355 113.643  1.00 11.72           C
ATOM   1751  C   THR A 246       0.267  62.518 114.309  1.00 13.47           C
ATOM   1752  O   THR A 246       0.421  62.340 115.518  1.00  3.31           O
ATOM   1753  CB  THR A 246      -1.366  60.889 113.348  1.00 13.70           C
ATOM   1754  OG1 THR A 246      -2.734  60.607 113.651  1.00 22.35           O
ATOM   1755  CG2 THR A 246      -0.450  59.992 114.151  1.00 23.59           C
ATOM   1756  N   SER A 247       1.263  62.852 113.501  1.00 19.43           N
ATOM   1757  CA  SER A 247       2.609  63.070 113.998  1.00 25.96           C
ATOM   1758  C   SER A 247       2.572  64.327 114.873  1.00 31.04           C
ATOM   1759  O   SER A 247       2.858  64.305 116.069  1.00 29.04           O
ATOM   1760  CB  SER A 247       3.546  63.286 112.803  1.00 19.11           C
ATOM   1761  OG  SER A 247       4.873  63.592 113.220  1.00 40.79           O
ATOM   1762  N   PHE A 248       2.170  65.411 114.224  1.00 39.78           N
ATOM   1763  CA  PHE A 248       2.066  66.757 114.772  1.00 45.15           C
ATOM   1764  C   PHE A 248       0.957  66.960 115.792  1.00 39.54           C
ATOM   1765  O   PHE A 248       0.544  68.087 116.041  1.00 44.71           O
ATOM   1766  CB  PHE A 248       1.832  67.691 113.594  1.00 64.18           C
ATOM   1767  CG  PHE A 248       2.090  69.126 113.879  1.00 77.73           C
ATOM   1768  CD1 PHE A 248       3.376  69.573 114.137  1.00 86.07           C
ATOM   1769  CD2 PHE A 248       1.056  70.049 113.788  1.00 80.31           C
ATOM   1770  CE1 PHE A 248       3.630  70.924 114.298  1.00 92.63           C
ATOM   1771  CE2 PHE A 248       1.291  71.400 113.946  1.00 84.15           C
ATOM   1772  CZ  PHE A 248       2.582  71.844 114.195  1.00 93.81           C
ATOM   1773  N   ASN A 249       0.478  65.888 116.401  1.00 35.73           N
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ATOM   1774  CA  ASN A 249      -0.611  66.033 117.355  1.00 34.50           C
ATOM   1775  C   ASN A 249      -0.607  65.054 118.504  1.00 40.42           C
ATOM   1776  O   ASN A 249      -1.376  65.203 119.445  1.00 42.06           O
ATOM   1777  CB  ASN A 249      -1.944  65.922 116.633  1.00 25.27           C
ATOM   1778  CG  ASN A 249      -2.435  67.247 116.144  1.00 27.53           C
ATOM   1779  OD1 ASN A 249      -2.504  68.208 116.914  1.00 34.54           O
ATOM   1780  ND2 ASN A 249      -2.782  67.321 114.863  1.00 23.24           N
ATOM   1781  N   GLN A 250       0.256  64.053 118.429  1.00 43.93           N
ATOM   1782  CA  GLN A 250       0.338  63.047 119.472  1.00 45.21           C
ATOM   1783  C   GLN A 250       0.044  63.578 120.876  1.00 45.89           C
ATOM   1784  O   GLN A 250      -0.597  62.894 121.674  1.00 46.33           O
ATOM   1785  CB  GLN A 250       1.710  62.376 119.429  1.00 49.33           C
ATOM   1786  CG  GLN A 250       2.754  63.146 118.653  1.00 56.41           C
ATOM   1787  CD  GLN A 250       3.999  62.330 118.422  1.00 67.52           C
ATOM   1788  OE1 GLN A 250       3.934  61.222 117.884  1.00 64.03           O
ATOM   1789  NE2 GLN A 250       5.145  62.868 118.826  1.00 73.52           N
ATOM   1790  N   GLU A 251       0.497  64.795 121.176  1.00 46.19           N
ATOM   1791  CA  GLU A 251       0.255  65.388 122.490  1.00 53.10           C
ATOM   1792  C   GLU A 251      -1.149  65.079 122.981  1.00 55.27           C
ATOM   1793  O   GLU A 251      -1.327  64.466 124.031  1.00 63.00           O
ATOM   1794  CB  GLU A 251       0.433  66.908 122.450  1.00 61.86           C
ATOM   1795  CG  GLU A 251       1.837  67.380 122.738  1.00 77.46           C
ATOM   1796  CD  GLU A 251       2.837  66.851 121.742  1.00 89.72           C
ATOM   1797  OE1 GLU A 251       3.019  65.618 121.679  1.00 97.55           O
ATOM   1798  OE2 GLU A 251       3.443  67.666 121.017  1.00 95.81           O
ATOM   1799  N   ARG A 252      -2.143  65.490 122.201  1.00 50.90           N
ATOM   1800  CA  ARG A 252      -3.541  65.290 122.567  1.00 50.56           C
ATOM   1801  C   ARG A 252      -4.116  63.899 122.362  1.00 46.98           C
ATOM   1802  O   ARG A 252      -4.856  63.400 123.215  1.00 53.85           O
ATOM   1803  CB  ARG A 252      -4.435  66.261 121.806  1.00 57.95           C
ATOM   1804  CG  ARG A 252      -4.082  67.703 121.974  1.00 73.90           C
ATOM   1805  CD  ARG A 252      -5.043  68.562 121.193  1.00 91.08           C
ATOM   1806  NE  ARG A 252      -4.553  69.929 121.068  1.00109.12           N
ATOM   1807  CZ  ARG A 252      -3.422  70.266 120.452  1.00117.35           C
ATOM   1808  NH1 ARG A 252      -2.652  69.335 119.898  1.00121.60           N
ATOM   1809  NH2 ARG A 252      -3.056  71.540 120.391  1.00122.11           N
ATOM   1810  N   ILE A 253      -3.789  63.271 121.240  1.00 34.95           N
ATOM   1811  CA  ILE A 253      -4.349  61.967 120.939  1.00 26.82           C
ATOM   1812  C   ILE A 253      -3.613  60.720 121.402  1.00 34.17           C
ATOM   1813  O   ILE A 253      -4.170  59.911 122.146  1.00 35.29           O
ATOM   1814  CB  ILE A 253      -4.590  61.847 119.447  1.00 12.97           C
ATOM   1815  CG1 ILE A 253      -3.310  62.193 118.687  1.00  3.31           C
ATOM   1816  CG2 ILE A 253      -5.712  62.764 119.039  1.00 24.79           C
ATOM   1817  CD1 ILE A 253      -3.460  62.075 117.175  1.00 14.82           C
ATOM   1818  N   VAL A 254      -2.374  60.561 120.949  1.00 42.48           N
ATOM   1819  CA  VAL A 254      -1.559  59.392 121.286  1.00 51.32           C
ATOM   1820  C   VAL A 254      -1.798  58.828 122.688  1.00 53.95           C
ATOM   1821  O   VAL A 254      -1.683  57.621 122.922  1.00 55.92           O
ATOM   1822  CB  VAL A 254      -0.049  59.709 121.164  1.00 49.29           C
ATOM   1823  CG1 VAL A 254       0.465  60.386 122.444  1.00 52.01           C
ATOM   1824  CG2 VAL A 254       0.717  58.427 120.872  1.00 50.05           C
ATOM   1825  N   ASP A 255      -2.136  59.721 123.609  1.00 56.09           N
ATOM   1826  CA  ASP A 255      -2.362  59.387 125.010  1.00 63.32           C
ATOM   1827  C   ASP A 255      -3.674  58.653 125.344  1.00 58.30           C
ATOM   1828  O   ASP A 255      -3.650  57.535 125.865  1.00 61.53           O
ATOM   1829  CB  ASP A 255      -2.273  60.672 125.834  1.00 81.31           C
ATOM   1830  CG  ASP A 255      -1.609  60.459 127.163  1.00 92.58           C
ATOM   1831  OD1 ASP A 255      -1.664  61.381 128.007  1.00103.11           O
ATOM   1832  OD2 ASP A 255      -1.028  59.369 127.355  1.00 95.27           O
ATOM   1833  N   VAL A 256      -4.810  59.289 125.060  1.00 47.34           N
ATOM   1834  CA  VAL A 256      -6.124  58.717 125.339  1.00 26.26           C
ATOM   1835  C   VAL A 256      -6.393  57.401 124.612  1.00 20.16           C
ATOM   1836  O   VAL A 256      -7.515  56.896 124.638  1.00 21.60           O
ATOM   1837  CB  VAL A 256      -7.236  59.711 124.966  1.00 17.99           C
ATOM   1838  CG1 VAL A 256      -7.333  60.796 126.003  1.00 15.54           C
ATOM   1839  CG2 VAL A 256      -6.943  60.329 123.608  1.00 11.70           C
ATOM   1840  N   ALA A 257      -5.365  56.852 123.968  1.00 21.31           N
ATOM   1841  CA  ALA A 257      -5.478  55.595 123.238  1.00 24.74           C
ATOM   1842  C   ALA A 257      -5.261  54.380 124.143  1.00 28.46           C
ATOM   1843  O   ALA A 257      -4.374  54.370 125.000  1.00 34.08           O
ATOM   1844  CB  ALA A 257      -4.477  55.578 122.112  1.00 30.69           C
ATOM   1845  N   GLY A 258      -6.071  53.350 123.935  1.00 27.17           N
ATOM   1846  CA  GLY A 258      -5.958  52.144 124.731  1.00 34.38           C
ATOM   1847  C   GLY A 258      -7.229  51.337 124.602  1.00 39.07           C
ATOM   1848  O   GLY A 258      -8.186  51.801 123.994  1.00 46.72           O
ATOM   1849  N   PRO A 259      -7.274  50.128 125.164  1.00 41.39           N
ATOM   1850  CA  PRO A 259      -8.450  49.260 125.103  1.00 37.99           C
ATOM   1851  C   PRO A 259      -9.781  49.981 125.261  1.00 38.04           C
ATOM   1852  O   PRO A 259      -9.930  50.841 126.124  1.00 37.32           O
ATOM   1853  CB  PRO A 259      -8.191  48.278 126.230  1.00 41.03           C
ATOM   1854  CG  PRO A 259      -6.731  48.076 126.112  1.00 44.48           C
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ATOM   1855  CD  PRO A 259      -6.202  49.488 125.940  1.00 47.07           C
ATOM   1856  N   GLY A 260     -10.749  49.619 124.424  1.00 37.51           N
ATOM   1857  CA  GLY A 260     -12.057  50.237 124.500  1.00 33.17           C
ATOM   1858  C   GLY A 260     -12.173  51.413 123.560  1.00 28.52           C
ATOM   1859  O   GLY A 260     -13.188  51.577 122.896  1.00 17.08           O
ATOM   1860  N   GLY A 261     -11.132  52.235 123.511  1.00 34.58           N
ATOM   1861  CA  GLY A 261     -11.138  53.391 122.631  1.00 44.49           C
ATOM   1862  C   GLY A 261      -9.848  53.579 121.840  1.00 42.98           C
ATOM   1863  O   GLY A 261      -8.758  53.595 122.411  1.00 51.16           O
ATOM   1864  N   TRP A 262      -9.961  53.747 120.526  1.00 34.48           N
ATOM   1865  CA  TRP A 262      -8.775  53.919 119.692  1.00 28.58           C
ATOM   1866  C   TRP A 262      -8.810  55.116 118.761  1.00 17.38           C
ATOM   1867  O   TRP A 262      -9.877  55.618 118.407  1.00  6.05           O
ATOM   1868  CB  TRP A 262      -8.559  52.702 118.809  1.00 35.71           C
ATOM   1869  CG  TRP A 262      -8.723  51.423 119.495  1.00 32.13           C
ATOM   1870  CD1 TRP A 262      -9.808  50.607 119.450  1.00 31.26           C
ATOM   1871  CD2 TRP A 262      -7.760  50.772 120.315  1.00 39.87           C
ATOM   1872  NE1 TRP A 262      -9.582  49.477 120.192  1.00 37.75           N
ATOM   1873  CE2 TRP A 262      -8.330  49.555 120.737  1.00 43.01           C
ATOM   1874  CE3 TRP A 262      -6.471  51.101 120.742  1.00 46.70           C
ATOM   1875  CZ2 TRP A 262      -7.653  48.658 121.557  1.00 57.69           C
ATOM   1876  CZ3 TRP A 262      -5.796  50.208 121.562  1.00 57.75           C
ATOM   1877  CH2 TRP A 262      -6.391  49.001 121.962  1.00 65.10           C
ATOM   1878  N   ASN A 263      -7.625  55.565 118.360  1.00 10.39           N
ATOM   1879  CA  ASN A 263      -7.521  56.658 117.409  1.00 18.03           C
ATOM   1880  C   ASN A 263      -7.642  56.011 116.036  1.00 18.47           C
ATOM   1881  O   ASN A 263      -6.921  55.067 115.722  1.00 26.57           O
ATOM   1882  CB  ASN A 263      -6.182  57.359 117.545  1.00 23.92           C
ATOM   1883  CG  ASN A 263      -6.251  58.536 118.460  1.00 21.75           C
ATOM   1884  OD1 ASN A 263      -7.115  59.401 118.317  1.00 20.11           O
ATOM   1885  ND2 ASN A 263      -5.332  58.595 119.399  1.00 16.20           N
ATOM   1886  N   ASP A 264      -8.555  56.518 115.222  1.00  8.32           N
ATOM   1887  CA  ASP A 264      -8.798  55.943 113.901  1.00 12.59           C
ATOM   1888  C   ASP A 264      -8.518  56.863 112.695  1.00 11.85           C
ATOM   1889  O   ASP A 264      -9.276  57.803 112.412  1.00  3.31           O
ATOM   1890  CB  ASP A 264     -10.237  55.405 113.881  1.00 25.66           C
ATOM   1891  CG  ASP A 264     -10.832  55.318 112.491  1.00 27.20           C
ATOM   1892  OD1 ASP A 264     -10.208  54.724 111.574  1.00 15.35           O
ATOM   1893  OD2 ASP A 264     -11.957  55.849 112.336  1.00 41.23           O
ATOM   1894  N   PRO A 265      -7.413  56.582 111.965  1.00 15.34           N
ATOM   1895  CA  PRO A 265      -6.863  57.251 110.771  1.00 23.99           C
ATOM   1896  C   PRO A 265      -7.803  57.195 109.577  1.00 28.89           C
ATOM   1897  O   PRO A 265      -8.107  58.216 108.945  1.00 35.15           O
ATOM   1898  CB  PRO A 265      -5.579  56.467 110.495  1.00 17.45           C
ATOM   1899  CG  PRO A 265      -5.192  55.950 111.859  1.00 24.86           C
ATOM   1900  CD  PRO A 265      -6.517  55.493 112.391  1.00 17.31           C
ATOM   1901  N   ASP A 266      -8.207  55.963 109.272  1.00 35.35           N
ATOM   1902  CA  ASP A 266      -9.136  55.614 108.202  1.00 41.09           C
ATOM   1903  C   ASP A 266      -8.830  54.255 107.598  1.00 38.83           C
ATOM   1904  O   ASP A 266      -7.910  53.551 108.015  1.00 36.66           O
ATOM   1905  CB  ASP A 266      -9.162  56.664 107.092  1.00 45.23           C
ATOM   1906  CG  ASP A 266     -10.562  56.884 106.559  1.00 47.07           C
ATOM   1907  OD1 ASP A 266     -11.405  55.997 106.792  1.00 48.02           O
ATOM   1908  OD2 ASP A 266     -10.830  57.927 105.920  1.00 46.64           O
ATOM   1909  N   MET A 267      -9.619  53.896 106.604  1.00 36.60           N
ATOM   1910  CA  MET A 267      -9.475  52.620 105.944  1.00 34.79           C
ATOM   1911  C   MET A 267      -8.076  52.362 105.395  1.00 27.72           C
ATOM   1912  O   MET A 267      -7.257  53.273 105.275  1.00 17.95           O
ATOM   1913  CB  MET A 267     -10.510  52.533 104.828  1.00 37.05           C
ATOM   1914  CG  MET A 267     -11.920  52.734 105.337  1.00 38.73           C
ATOM   1915  SD  MET A 267     -13.059  53.352 104.118  1.00 59.81           S
ATOM   1916  CE  MET A 267     -12.830  55.134 104.314  1.00 67.70           C
ATOM   1917  N   LEU A 268      -7.816  51.092 105.103  1.00 26.33           N
ATOM   1918  CA  LEU A 268      -6.560  50.641 104.530  1.00 23.79           C
ATOM   1919  C   LEU A 268      -6.809  50.534 103.027  1.00 27.33           C
ATOM   1920  O   LEU A 268      -7.592  49.700 102.572  1.00 36.49           O
ATOM   1921  CB  LEU A 268      -6.169  49.276 105.097  1.00 19.73           C
ATOM   1922  CG  LEU A 268      -5.596  49.297 106.516  1.00 23.04           C
ATOM   1923  CD1 LEU A 268      -5.216  47.897 106.948  1.00 21.67           C
ATOM   1924  CD2 LEU A 268      -4.380  50.189 106.550  1.00 25.62           C
ATOM   1925  N   VAL A 269      -6.151  51.390 102.256  1.00 27.46           N
ATOM   1926  CA  VAL A 269      -6.334  51.398 100.813  1.00 33.63           C
ATOM   1927  C   VAL A 269      -5.350  50.494 100.097  1.00 33.62           C
ATOM   1928  O   VAL A 269      -5.174  50.597  98.880  1.00 44.00           O
ATOM   1929  CB  VAL A 269      -6.190  52.806 100.274  1.00 36.44           C
ATOM   1930  CG1 VAL A 269      -7.094  53.737 101.067  1.00 45.39           C
ATOM   1931  CG2 VAL A 269      -4.737  53.255 100.379  1.00 45.21           C
ATOM   1932  N   ILE A 270      -4.702  49.616 100.864  1.00 29.66           N
ATOM   1933  CA  ILE A 270      -3.735  48.663 100.309  1.00 30.37           C
ATOM   1934  C   ILE A 270      -4.487  47.621  99.458  1.00 33.11           C
ATOM   1935  O   ILE A 270      -5.477  47.038  99.916  1.00 31.89           O
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ATOM   1936  CB  ILE A 270      -2.956  47.944 101.446  1.00 27.69           C
ATOM   1937  CG1 ILE A 270      -2.044  48.936 102.162  1.00 43.55           C
ATOM   1938  CG2 ILE A 270      -2.106  46.825 100.888  1.00 29.54           C
ATOM   1939  CD1 ILE A 270      -1.483  48.423 103.479  1.00 41.14           C
ATOM   1940  N   GLY A 271      -4.026  47.387  98.231  1.00 37.10           N
ATOM   1941  CA  GLY A 271      -4.697  46.416  97.381  1.00 42.05           C
ATOM   1942  C   GLY A 271      -5.414  47.078  96.219  1.00 45.94           C
ATOM   1943  O   GLY A 271      -5.978  46.417  95.342  1.00 46.95           O
ATOM   1944  N   ASN A 272      -5.395  48.405  96.232  1.00 49.29           N
ATOM   1945  CA  ASN A 272      -6.013  49.196  95.189  1.00 50.77           C
ATOM   1946  C   ASN A 272      -4.955  49.544  94.169  1.00 54.19           C
ATOM   1947  O   ASN A 272      -4.165  48.688  93.795  1.00 62.17           O
ATOM   1948  CB  ASN A 272      -6.616  50.463  95.774  1.00 57.02           C
ATOM   1949  CG  ASN A 272      -7.937  50.208  96.456  1.00 64.75           C
ATOM   1950  OD1 ASN A 272      -8.078  49.269  97.245  1.00 70.55           O
ATOM   1951  ND2 ASN A 272      -8.920  51.048  96.156  1.00 65.78           N
ATOM   1952  N   PHE A 273      -4.906  50.803  93.746  1.00 57.71           N
ATOM   1953  CA  PHE A 273      -3.961  51.221  92.706  1.00 60.84           C
ATOM   1954  C   PHE A 273      -3.119  52.455  92.989  1.00 59.50           C
ATOM   1955  O   PHE A 273      -2.030  52.593  92.439  1.00 61.91           O
ATOM   1956  CB  PHE A 273      -4.712  51.464  91.391  1.00 60.01           C
ATOM   1957  CG  PHE A 273      -6.185  51.147  91.462  1.00 59.22           C
ATOM   1958  CD1 PHE A 273      -6.766  50.281  90.534  1.00 54.75           C
ATOM   1959  CD2 PHE A 273      -6.985  51.679  92.475  1.00 58.02           C
ATOM   1960  CE1 PHE A 273      -8.124  49.943  90.615  1.00 51.25           C
ATOM   1961  CE2 PHE A 273      -8.336  51.354  92.573  1.00 58.47           C
ATOM   1962  CZ  PHE A 273      -8.909  50.481  91.642  1.00 55.69           C
ATOM   1963  N   GLY A 274      -3.624  53.348  93.836  1.00 55.05           N
ATOM   1964  CA  GLY A 274      -2.914  54.580  94.139  1.00 44.40           C
ATOM   1965  C   GLY A 274      -1.577  54.444  94.829  1.00 39.16           C
ATOM   1966  O   GLY A 274      -0.753  55.362  94.769  1.00 47.25           O
ATOM   1967  N   LEU A 275      -1.344  53.307  95.475  1.00 28.25           N
ATOM   1968  CA  LEU A 275      -0.091  53.116  96.183  1.00 27.58           C
ATOM   1969  C   LEU A 275       0.928  52.199  95.542  1.00 32.09           C
ATOM   1970  O   LEU A 275       0.601  51.154  94.977  1.00 42.20           O
ATOM   1971  CB  LEU A 275      -0.360  52.640  97.609  1.00 16.36           C
ATOM   1972  CG  LEU A 275      -1.250  53.577  98.419  1.00  5.93           C
ATOM   1973  CD1 LEU A 275      -1.093  53.240  99.888  1.00  3.31           C
ATOM   1974  CD2 LEU A 275      -0.864  55.035  98.151  1.00  3.31           C
ATOM   1975  N   SER A 276       2.180  52.628  95.646  1.00 29.50           N
ATOM   1976  CA  SER A 276       3.314  51.881  95.136  1.00 36.25           C
ATOM   1977  C   SER A 276       3.451  50.735  96.104  1.00 35.37           C
ATOM   1978  O   SER A 276       2.738  50.677  97.100  1.00 27.12           O
ATOM   1979  CB  SER A 276       4.594  52.712  95.219  1.00 46.24           C
ATOM   1980  OG  SER A 276       5.122  52.704  96.541  1.00 42.54           O
ATOM   1981  N   TRP A 277       4.371  49.826  95.833  1.00 37.28           N
ATOM   1982  CA  TRP A 277       4.540  48.740  96.762  1.00 32.97           C
ATOM   1983  C   TRP A 277       5.008  49.364  98.048  1.00 27.84           C
ATOM   1984  O   TRP A 277       4.267  49.420  99.028  1.00 25.18           O
ATOM   1985  CB  TRP A 277       5.586  47.736  96.292  1.00 44.35           C
ATOM   1986  CG  TRP A 277       5.823  46.671  97.324  1.00 45.64           C
ATOM   1987  CD1 TRP A 277       7.004  46.389  97.961  1.00 49.91           C
ATOM   1988  CD2 TRP A 277       4.839  45.797  97.898  1.00 45.05           C
ATOM   1989  NE1 TRP A 277       6.815  45.398  98.898  1.00 47.99           N
ATOM   1990  CE2 TRP A 277       5.496  45.016  98.884  1.00 44.93           C
ATOM   1991  CE3 TRP A 277       3.465  45.599  97.680  1.00 43.84           C
ATOM   1992  CZ2 TRP A 277       4.820  44.047  99.657  1.00 41.10           C
ATOM   1993  CZ3 TRP A 277       2.793  44.637  98.447  1.00 38.42           C
ATOM   1994  CH2 TRP A 277       3.474  43.875  99.424  1.00 38.38           C
ATOM   1995  N   ASN A 278       6.237  49.862  98.042  1.00 27.92           N
ATOM   1996  CA  ASN A 278       6.792  50.454  99.252  1.00 33.66           C
ATOM   1997  C   ASN A 278       5.887  51.473  99.939  1.00 36.34           C
ATOM   1998  O   ASN A 278       6.108  51.821 101.096  1.00 40.73           O
ATOM   1999  CB  ASN A 278       8.169  51.051  98.967  1.00 29.87           C
ATOM   2000  CG  ASN A 278       9.234  49.986  98.822  1.00 31.51           C
ATOM   2001  OD1 ASN A 278       9.542  49.270  99.778  1.00 31.53           O
ATOM   2002  ND2 ASN A 278       9.791  49.862  97.618  1.00 36.12           N
ATOM   2003  N   GLN A 279       4.869  51.957  99.238  1.00 35.96           N
ATOM   2004  CA  GLN A 279       3.945  52.880  99.868  1.00 29.77           C
ATOM   2005  C   GLN A 279       2.915  52.083 100.678  1.00 26.47           C
ATOM   2006  O   GLN A 279       2.468  52.521 101.732  1.00 16.00           O
ATOM   2007  CB  GLN A 279       3.267  53.743  98.810  1.00 27.43           C
ATOM   2008  CG  GLN A 279       4.137  54.893  98.349  1.00 28.81           C
ATOM   2009  CD  GLN A 279       3.737  55.417  96.991  1.00 34.90           C
ATOM   2010  OE1 GLN A 279       2.550  55.562  96.694  1.00 40.75           O
ATOM   2011  NE2 GLN A 279       4.727  55.712  96.155  1.00 39.37           N
ATOM   2012  N   GLN A 280       2.567  50.897 100.196  1.00 30.38           N
ATOM   2013  CA  GLN A 280       1.595  50.068 100.881  1.00 30.96           C
ATOM   2014  C   GLN A 280       2.139  49.546 102.189  1.00 30.35           C
ATOM   2015  O   GLN A 280       1.480  49.670 103.228  1.00 33.06           O
ATOM   2016  CB  GLN A 280       1.164  48.895  99.999  1.00 31.33           C
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ATOM   2017  CG  GLN A 280       0.561  49.312  98.661  1.00 36.80           C
ATOM   2018  CD  GLN A 280      -0.063  48.156  97.897  1.00 37.60           C
ATOM   2019  OE1 GLN A 280      -1.090  47.615  98.297  1.00 38.74           O
ATOM   2020  NE2 GLN A 280       0.561  47.772  96.793  1.00 34.63           N
ATOM   2021  N   VAL A 281       3.333  48.961 102.162  1.00 31.13           N
ATOM   2022  CA  VAL A 281       3.900  48.432 103.406  1.00 35.92           C
ATOM   2023  C   VAL A 281       3.877  49.529 104.449  1.00 33.94           C
ATOM   2024  O   VAL A 281       3.578  49.294 105.614  1.00 31.74           O
ATOM   2025  CB  VAL A 281       5.356  47.938 103.238  1.00 34.38           C
ATOM   2026  CG1 VAL A 281       5.456  47.074 102.012  1.00 34.63           C
ATOM   2027  CG2 VAL A 281       6.313  49.110 103.162  1.00 42.38           C
ATOM   2028  N   THR A 282       4.172  50.743 104.008  1.00 31.90           N
ATOM   2029  CA  THR A 282       4.186  51.886 104.902  1.00 27.13           C
ATOM   2030  C   THR A 282       2.872  52.024 105.671  1.00 26.03           C
ATOM   2031  O   THR A 282       2.867  51.968 106.898  1.00 28.72           O
ATOM   2032  CB  THR A 282       4.444  53.188 104.122  1.00 26.85           C
ATOM   2033  OG1 THR A 282       5.592  53.021 103.280  1.00 31.54           O
ATOM   2034  CG2 THR A 282       4.685  54.340 105.085  1.00 20.56           C
ATOM   2035  N   GLN A 283       1.760  52.190 104.956  1.00 18.46           N
ATOM   2036  CA  GLN A 283       0.477  52.342 105.627  1.00 18.53           C
ATOM   2037  C   GLN A 283       0.276  51.212 106.605  1.00 18.82           C
ATOM   2038  O   GLN A 283       0.014  51.439 107.791  1.00 21.00           O
ATOM   2039  CB  GLN A 283      -0.703  52.343 104.654  1.00 15.63           C
ATOM   2040  CG  GLN A 283      -2.056  52.418 105.397  1.00 19.59           C
ATOM   2041  CD  GLN A 283      -3.291  52.386 104.495  1.00 27.53           C
ATOM   2042  OE1 GLN A 283      -3.497  51.435 103.741  1.00 31.55           O
ATOM   2043  NE2 GLN A 283      -4.128  53.421 104.587  1.00 35.44           N
ATOM   2044  N   MET A 284       0.400  49.987 106.111  1.00  3.31           N
ATOM   2045  CA  MET A 284       0.215  48.833 106.974  1.00  3.31           C
ATOM   2046  C   MET A 284       1.130  48.904 108.180  1.00  3.31           C
ATOM   2047  O   MET A 284       0.679  48.769 109.307  1.00  7.85           O
ATOM   2048  CB  MET A 284       0.488  47.552 106.203  1.00  8.74           C
ATOM   2049  CG  MET A 284       0.192  46.278 106.980  1.00  6.90           C
ATOM   2050  SD  MET A 284      -1.576  45.915 107.116  1.00 16.54           S
ATOM   2051  CE  MET A 284      -1.805  46.136 108.956  1.00  6.72           C
ATOM   2052  N   ALA A 285       2.417  49.120 107.944  1.00  4.64           N
ATOM   2053  CA  ALA A 285       3.375  49.193 109.041  1.00 11.01           C
ATOM   2054  C   ALA A 285       2.964  50.228 110.059  1.00 13.01           C
ATOM   2055  O   ALA A 285       2.950  49.959 111.261  1.00 14.68           O
ATOM   2056  CB  ALA A 285       4.755  49.530 108.521  1.00 19.24           C
ATOM   2057  N   LEU A 286       2.629  51.419 109.585  1.00 11.37           N
ATOM   2058  CA  LEU A 286       2.247  52.471 110.500  1.00 14.05           C
ATOM   2059  C   LEU A 286       0.879  52.342 111.166  1.00 17.26           C
ATOM   2060  O   LEU A 286       0.731  52.755 112.321  1.00 15.35           O
ATOM   2061  CB  LEU A 286       2.436  53.826 109.826  1.00  8.12           C
ATOM   2062  CG  LEU A 286       3.916  54.187 109.997  1.00  7.08           C
ATOM   2063  CD1 LEU A 286       4.412  54.888 108.795  1.00  9.40           C
ATOM   2064  CD2 LEU A 286       4.116  55.041 111.246  1.00  3.31           C
ATOM   2065  N   TRP A 287      -0.119  51.774 110.491  1.00 17.25           N
ATOM   2066  CA  TRP A 287      -1.405  51.613 111.168  1.00 29.47           C
ATOM   2067  C   TRP A 287      -1.166  50.692 112.360  1.00 31.64           C
ATOM   2068  O   TRP A 287      -1.783  50.850 113.419  1.00 33.74           O
ATOM   2069  CB  TRP A 287      -2.459  50.998 110.256  1.00 33.70           C
ATOM   2070  CG  TRP A 287      -3.358  52.007 109.618  1.00 39.21           C
ATOM   2071  CD1 TRP A 287      -4.717  51.949 109.526  1.00 47.57           C
ATOM   2072  CD2 TRP A 287      -2.966  53.217 108.969  1.00 36.94           C
ATOM   2073  NE1 TRP A 287      -5.197  53.046 108.861  1.00 51.26           N
ATOM   2074  CE2 TRP A 287      -4.144  53.841 108.509  1.00 40.64           C
ATOM   2075  CE3 TRP A 287      -1.732  53.834 108.730  1.00 39.12           C
ATOM   2076  CZ2 TRP A 287      -4.126  55.056 107.823  1.00 40.95           C
ATOM   2077  CZ3 TRP A 287      -1.715  55.047 108.043  1.00 37.09           C
ATOM   2078  CH2 TRP A 287      -2.908  55.643 107.599  1.00 35.17           C
ATOM   2079  N   ALA A 288      -0.257  49.740 112.178  1.00 26.74           N
ATOM   2080  CA  ALA A 288       0.097  48.809 113.235  1.00 26.87           C
ATOM   2081  C   ALA A 288       0.749  49.570 114.388  1.00 29.10           C
ATOM   2082  O   ALA A 288       0.472  49.296 115.560  1.00 29.38           O
ATOM   2083  CB  ALA A 288       1.048  47.755 112.706  1.00 25.97           C
ATOM   2084  N   ILE A 289       1.616  50.525 114.059  1.00 26.15           N
ATOM   2085  CA  ILE A 289       2.290  51.310 115.089  1.00 21.64           C
ATOM   2086  C   ILE A 289       1.299  52.166 115.840  1.00 21.16           C
ATOM   2087  O   ILE A 289       1.436  52.349 117.045  1.00 18.99           O
ATOM   2088  CB  ILE A 289       3.339  52.254 114.507  1.00 20.59           C
ATOM   2089  CG1 ILE A 289       4.512  51.441 113.947  1.00 17.18           C
ATOM   2090  CG2 ILE A 289       3.808  53.233 115.593  1.00 29.08           C
ATOM   2091  CD1 ILE A 289       5.332  50.768 115.030  1.00 17.70           C
ATOM   2092  N   MET A 290       0.299  52.683 115.128  1.00 23.88           N
ATOM   2093  CA  MET A 290      -0.715  53.550 115.734  1.00 30.50           C
ATOM   2094  C   MET A 290      -1.986  52.847 116.198  1.00 30.09           C
ATOM   2095  O   MET A 290      -3.072  53.425 116.084  1.00 35.20           O
ATOM   2096  CB  MET A 290      -1.134  54.643 114.755  1.00 32.03           C
ATOM   2097  CG  MET A 290      -0.012  55.363 114.077  1.00 39.82           C
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ATOM   2098  SD  MET A 290      -0.757  56.559 113.005  1.00 26.07           S
ATOM   2099  CE  MET A 290      -1.038  55.555 111.564  1.00 23.83           C
ATOM   2100  N   ALA A 291      -1.858  51.631 116.725  1.00 30.09           N
ATOM   2101  CA  ALA A 291      -3.019  50.884 117.187  1.00 31.39           C
ATOM   2102  C   ALA A 291      -4.246  51.539 116.582  1.00 32.14           C
ATOM   2103  O   ALA A 291      -5.031  52.191 117.271  1.00 25.20           O
ATOM   2104  CB  ALA A 291      -3.096  50.916 118.700  1.00 34.14           C
ATOM   2105  N   ALA A 292      -4.367  51.410 115.269  1.00 33.73           N
ATOM   2106  CA  ALA A 292      -5.487  51.998 114.554  1.00 36.12           C
ATOM   2107  C   ALA A 292      -6.433  50.912 114.096  1.00 30.80           C
ATOM   2108  O   ALA A 292      -6.022  49.769 113.869  1.00 32.69           O
ATOM   2109  CB  ALA A 292      -4.986  52.785 113.346  1.00 46.22           C
ATOM   2110  N   PRO A 293      -7.720  51.250 113.951  1.00 28.94           N
ATOM   2111  CA  PRO A 293      -8.632  50.202 113.506  1.00 24.30           C
ATOM   2112  C   PRO A 293      -8.208  49.776 112.092  1.00 15.99           C
ATOM   2113  O   PRO A 293      -7.829  50.617 111.265  1.00 15.74           O
ATOM   2114  CB  PRO A 293      -9.994  50.899 113.527  1.00 26.38           C
ATOM   2115  CG  PRO A 293      -9.814  52.021 114.504  1.00 34.28           C
ATOM   2116  CD  PRO A 293      -8.436  52.516 114.177  1.00 29.52           C
ATOM   2117  N   LEU A 294      -8.262  48.475 111.824  1.00 19.73           N
ATOM   2118  CA  LEU A 294      -7.890  47.958 110.510  1.00 26.53           C
ATOM   2119  C   LEU A 294      -9.101  47.695 109.638  1.00 22.11           C
ATOM   2120  O   LEU A 294      -9.781  46.675 109.795  1.00 22.16           O
ATOM   2121  CB  LEU A 294      -7.091  46.666 110.654  1.00 33.64           C
ATOM   2122  CG  LEU A 294      -5.896  46.869 111.584  1.00 32.51           C
ATOM   2123  CD1 LEU A 294      -5.175  45.550 111.775  1.00 39.27           C
ATOM   2124  CD2 LEU A 294      -4.966  47.929 111.011  1.00 38.99           C
ATOM   2125  N   PHE A 295      -9.380  48.626 108.734  1.00 15.76           N
ATOM   2126  CA  PHE A 295     -10.496  48.461 107.826  1.00 22.79           C
ATOM   2127  C   PHE A 295     -10.057  48.611 106.398  1.00 21.95           C
ATOM   2128  O   PHE A 295      -9.621  49.684 105.978  1.00 33.01           O
ATOM   2129  CB  PHE A 295     -11.591  49.461 108.128  1.00 34.79           C
ATOM   2130  CG  PHE A 295     -12.427  49.066 109.284  1.00 37.92           C
ATOM   2131  CD1 PHE A 295     -11.858  48.912 110.538  1.00 41.65           C
ATOM   2132  CD2 PHE A 295     -13.779  48.796 109.120  1.00 38.93           C
ATOM   2133  CE1 PHE A 295     -12.623  48.488 111.617  1.00 41.88           C
ATOM   2134  CE2 PHE A 295     -14.557  48.373 110.192  1.00 43.07           C
ATOM   2135  CZ  PHE A 295     -13.976  48.219 111.446  1.00 41.57           C
ATOM   2136  N   MET A 296     -10.157  47.526 105.647  1.00 16.43           N
ATOM   2137  CA  MET A 296      -9.772  47.568 104.264  1.00 20.20           C
ATOM   2138  C   MET A 296     -10.900  48.240 103.506  1.00 24.39           C
ATOM   2139  O   MET A 296     -12.021  48.359 104.008  1.00 27.05           O
ATOM   2140  CB  MET A 296      -9.584  46.158 103.740  1.00 19.92           C
ATOM   2141  CG  MET A 296      -8.577  45.336 104.497  1.00 34.51           C
ATOM   2142  SD  MET A 296      -8.572  43.657 103.898  1.00 39.83           S
ATOM   2143  CE  MET A 296      -9.951  42.993 104.798  1.00 45.94           C
ATOM   2144  N   SER A 297     -10.578  48.703 102.308  1.00 27.42           N
ATOM   2145  CA  SER A 297     -11.539  49.327 101.435  1.00 25.61           C
ATOM   2146  C   SER A 297     -10.968  48.931 100.097  1.00 25.82           C
ATOM   2147  O   SER A 297     -10.318  49.718  99.404  1.00 20.60           O
ATOM   2148  CB  SER A 297     -11.530  50.840 101.585  1.00 34.64           C
ATOM   2149  OG  SER A 297     -12.538  51.408 100.771  1.00 33.54           O
ATOM   2150  N   ASN A 298     -11.179  47.673  99.753  1.00 31.94           N
ATOM   2151  CA  ASN A 298     -10.675  47.144  98.504  1.00 37.75           C
ATOM   2152  C   ASN A 298     -11.640  46.084  98.022  1.00 39.05           C
ATOM   2153  O   ASN A 298     -12.508  45.647  98.771  1.00 40.73           O
ATOM   2154  CB  ASN A 298      -9.292  46.534  98.730  1.00 41.55           C
ATOM   2155  CG  ASN A 298      -9.217  45.733 100.025  1.00 41.53           C
ATOM   2156  OD1 ASN A 298      -9.945  44.764 100.207  1.00 44.50           O
ATOM   2157  ND2 ASN A 298      -8.343  46.148 100.934  1.00 41.54           N
ATOM   2158  N   ASP A 299     -11.506  45.687  96.765  1.00 36.81           N
ATOM   2159  CA  ASP A 299     -12.358  44.650  96.223  1.00 37.64           C
ATOM   2160  C   ASP A 299     -11.584  43.354  96.440  1.00 35.85           C
ATOM   2161  O   ASP A 299     -10.636  43.074  95.710  1.00 33.62           O
ATOM   2162  CB  ASP A 299     -12.583  44.871  94.736  1.00 43.70           C
ATOM   2163  CG  ASP A 299     -13.527  43.859  94.144  1.00 54.79           C
ATOM   2164  OD1 ASP A 299     -13.591  42.740  94.685  1.00 67.53           O
ATOM   2165  OD2 ASP A 299     -14.190  44.167  93.132  1.00 67.01           O
ATOM   2166  N   LEU A 300     -11.976  42.584  97.455  1.00 32.08           N
ATOM   2167  CA  LEU A 300     -11.327  41.310  97.790  1.00 30.22           C
ATOM   2168  C   LEU A 300     -11.470  40.241  96.684  1.00 35.38           C
ATOM   2169  O   LEU A 300     -10.860  39.162  96.753  1.00 42.36           O
ATOM   2170  CB  LEU A 300     -11.907  40.743  99.096  1.00 18.15           C
ATOM   2171  CG  LEU A 300     -11.796  41.541 100.401  1.00 30.55           C
ATOM   2172  CD1 LEU A 300     -12.475  42.884 100.243  1.00 29.26           C
ATOM   2173  CD2 LEU A 300     -12.442  40.763 101.546  1.00 33.51           C
ATOM   2174  N   ARG A 301     -12.298  40.519  95.680  1.00 37.98           N
ATOM   2175  CA  ARG A 301     -12.507  39.574  94.583  1.00 42.73           C
ATOM   2176  C   ARG A 301     -11.295  39.662  93.686  1.00 53.30           C
ATOM   2177  O   ARG A 301     -10.744  38.653  93.259  1.00 57.15           O
ATOM   2178  CB  ARG A 301     -13.769  39.944  93.799  1.00 34.40           C
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ATOM   2179  CG  ARG A 301     -14.984  40.079  94.705  1.00 24.85           C
ATOM   2180  CD  ARG A 301     -16.235  40.592  94.000  1.00 25.32           C
ATOM   2181  NE  ARG A 301     -16.077  41.935  93.443  1.00 41.71           N
ATOM   2182  CZ  ARG A 301     -17.092  42.734  93.121  1.00 44.10           C
ATOM   2183  NH1 ARG A 301     -18.343  42.330  93.308  1.00 50.21           N
ATOM   2184  NH2 ARG A 301     -16.855  43.927  92.591  1.00 42.60           N
ATOM   2185  N   HIS A 302     -10.878  40.889  93.415  1.00 63.36           N
ATOM   2186  CA  HIS A 302      -9.731  41.118  92.565  1.00 70.59           C
ATOM   2187  C   HIS A 302      -8.688  41.887  93.338  1.00 66.36           C
ATOM   2188  O   HIS A 302      -8.665  43.112  93.328  1.00 73.44           O
ATOM   2189  CB  HIS A 302     -10.185  41.869  91.324  1.00 77.08           C
ATOM   2190  CG  HIS A 302     -11.304  41.185  90.607  1.00 87.66           C
ATOM   2191  ND1 HIS A 302     -11.985  41.760  89.558  1.00 94.33           N
ATOM   2192  CD2 HIS A 302     -11.867  39.968  90.799  1.00 93.17           C
ATOM   2193  CE1 HIS A 302     -12.920  40.929  89.136  1.00 95.03           C
ATOM   2194  NE2 HIS A 302     -12.869  39.834  89.873  1.00 96.98           N
ATOM   2195  N   ILE A 303      -7.826  41.137  94.013  1.00 53.55           N
ATOM   2196  CA  ILE A 303      -6.771  41.706  94.827  1.00 35.96           C
ATOM   2197  C   ILE A 303      -5.493  40.928  94.609  1.00 34.98           C
ATOM   2198  O   ILE A 303      -5.501  39.701  94.600  1.00 29.95           O
ATOM   2199  CB  ILE A 303      -7.135  41.631  96.316  1.00 27.37           C
ATOM   2200  CG1 ILE A 303      -6.021  42.250  97.160  1.00 23.79           C
ATOM   2201  CG2 ILE A 303      -7.341  40.183  96.716  1.00 32.58           C
ATOM   2202  CD1 ILE A 303      -6.378  42.429  98.601  1.00 29.68           C
ATOM   2203  N   SER A 304      -4.397  41.655  94.436  1.00 33.35           N
ATOM   2204  CA  SER A 304      -3.086  41.056  94.218  1.00 29.72           C
ATOM   2205  C   SER A 304      -2.734  40.021  95.283  1.00 24.66           C
ATOM   2206  O   SER A 304      -3.131  40.143  96.444  1.00 21.66           O
ATOM   2207  CB  SER A 304      -2.024  42.159  94.191  1.00 37.18           C
ATOM   2208  OG  SER A 304      -2.505  43.327  94.844  1.00 41.23           O
ATOM   2209  N   PRO A 305      -1.983  38.981  94.904  1.00 28.02           N
ATOM   2210  CA  PRO A 305      -1.610  37.957  95.881  1.00 31.32           C
ATOM   2211  C   PRO A 305      -0.597  38.587  96.792  1.00 35.76           C
ATOM   2212  O   PRO A 305      -0.626  38.392  97.999  1.00 33.70           O
ATOM   2213  CB  PRO A 305      -0.979  36.866  95.025  1.00 31.17           C
ATOM   2214  CG  PRO A 305      -1.551  37.108  93.662  1.00 36.08           C
ATOM   2215  CD  PRO A 305      -1.528  38.601  93.563  1.00 36.70           C
ATOM   2216  N   GLN A 306       0.302  39.351  96.177  1.00 42.85           N
ATOM   2217  CA  GLN A 306       1.357  40.046  96.899  1.00 57.20           C
ATOM   2218  C   GLN A 306       0.745  40.974  97.942  1.00 57.39           C
ATOM   2219  O   GLN A 306       1.282  41.138  99.040  1.00 57.53           O
ATOM   2220  CB  GLN A 306       2.243  40.837  95.923  1.00 66.11           C
ATOM   2221  CG  GLN A 306       1.492  41.722  94.945  1.00 85.74           C
ATOM   2222  CD  GLN A 306       2.427  42.537  94.062  1.00 95.69           C
ATOM   2223  OE1 GLN A 306       3.256  41.987  93.337  1.00 94.96           O
ATOM   2224  NE2 GLN A 306       2.294  43.857  94.119  1.00 99.44           N
ATOM   2225  N   ALA A 307      -0.395  41.566  97.605  1.00 57.94           N
ATOM   2226  CA  ALA A 307      -1.076  42.463  98.524  1.00 51.17           C
ATOM   2227  C   ALA A 307      -1.655  41.654  99.667  1.00 44.95           C
ATOM   2228  O   ALA A 307      -1.232  41.798 100.805  1.00 39.07           O
ATOM   2229  CB  ALA A 307      -2.179  43.202  97.809  1.00 55.61           C
ATOM   2230  N   LYS A 308      -2.621  40.796  99.352  1.00 42.01           N
ATOM   2231  CA  LYS A 308      -3.268  39.944 100.350  1.00 47.04           C
ATOM   2232  C   LYS A 308      -2.281  39.359 101.354  1.00 50.29           C
ATOM   2233  O   LYS A 308      -2.623  39.137 102.513  1.00 47.87           O
ATOM   2234  CB  LYS A 308      -3.994  38.784  99.671  1.00 55.40           C
ATOM   2235  CG  LYS A 308      -4.576  37.776 100.662  1.00 60.40           C
ATOM   2236  CD  LYS A 308      -4.896  36.445 100.006  1.00 67.45           C
ATOM   2237  CE  LYS A 308      -3.630  35.772  99.525  1.00 70.11           C
ATOM   2238  NZ  LYS A 308      -3.911  34.412  99.008  1.00 71.25           N
ATOM   2239  N   ALA A 309      -1.064  39.088 100.890  1.00 51.68           N
ATOM   2240  CA  ALA A 309      -0.020  38.525 101.736  1.00 47.05           C
ATOM   2241  C   ALA A 309       0.271  39.497 102.860  1.00 41.92           C
ATOM   2242  O   ALA A 309       0.223  39.152 104.043  1.00 39.00           O
ATOM   2243  CB  ALA A 309       1.235  38.288 100.929  1.00 48.75           C
ATOM   2244  N   LEU A 310       0.575  40.725 102.473  1.00 38.55           N
ATOM   2245  CA  LEU A 310       0.862  41.776 103.431  1.00 35.05           C
ATOM   2246  C   LEU A 310      -0.327  41.965 104.350  1.00 31.60           C
ATOM   2247  O   LEU A 310      -0.208  41.787 105.546  1.00 36.47           O
ATOM   2248  CB  LEU A 310       1.156  43.075 102.692  1.00 40.89           C
ATOM   2249  CG  LEU A 310       1.351  44.358 103.492  1.00 41.10           C
ATOM   2250  CD1 LEU A 310       2.416  44.142 104.544  1.00 53.29           C
ATOM   2251  CD2 LEU A 310       1.742  45.500 102.549  1.00 32.28           C
ATOM   2252  N   LEU A 311      -1.475  42.311 103.782  1.00 31.14           N
ATOM   2253  CA  LEU A 311      -2.695  42.532 104.554  1.00 33.68           C
ATOM   2254  C   LEU A 311      -2.941  41.491 105.655  1.00 28.45           C
ATOM   2255  O   LEU A 311      -3.516  41.806 106.724  1.00 17.90           O
ATOM   2256  CB  LEU A 311      -3.896  42.582 103.603  1.00 30.88           C
ATOM   2257  CG  LEU A 311      -4.044  43.927 102.895  1.00 37.10           C
ATOM   2258  CD1 LEU A 311      -4.744  43.766 101.566  1.00 32.41           C
ATOM   2259  CD2 LEU A 311      -4.805  44.869 103.803  1.00 41.72           C
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ATOM   2260  N   GLN A 312      -2.484  40.263 105.405  1.00 27.61           N
ATOM   2261  CA  GLN A 312      -2.674  39.162 106.353  1.00 30.22           C
ATOM   2262  C   GLN A 312      -1.445  38.737 107.173  1.00 35.43           C
ATOM   2263  O   GLN A 312      -1.537  37.806 107.965  1.00 35.04           O
ATOM   2264  CB  GLN A 312      -3.223  37.936 105.610  1.00 25.27           C
ATOM   2265  CG  GLN A 312      -4.519  38.187 104.853  1.00 29.16           C
ATOM   2266  CD  GLN A 312      -5.153  36.907 104.370  1.00 34.59           C
ATOM   2267  OE1 GLN A 312      -4.476  36.038 103.828  1.00 40.71           O
ATOM   2268  NE2 GLN A 312      -6.461  36.782 104.560  1.00 42.85           N
ATOM   2269  N   ASP A 313      -0.309  39.406 106.999  1.00 42.55           N
ATOM   2270  CA  ASP A 313       0.896  39.037 107.743  1.00 51.48           C
ATOM   2271  C   ASP A 313       0.644  38.869 109.239  1.00 56.83           C
ATOM   2272  O   ASP A 313       0.501  39.845 109.970  1.00 57.24           O
ATOM   2273  CB  ASP A 313       2.004  40.071 107.535  1.00 56.92           C
ATOM   2274  CG  ASP A 313       3.332  39.627 108.137  1.00 63.98           C
ATOM   2275  OD1 ASP A 313       3.327  39.138 109.292  1.00 75.54           O
ATOM   2276  OD2 ASP A 313       4.376  39.774 107.462  1.00 63.30           O
ATOM   2277  N   LYS A 314       0.628  37.615 109.680  1.00 65.49           N
ATOM   2278  CA  LYS A 314       0.374  37.256 111.078  1.00 66.96           C
ATOM   2279  C   LYS A 314       1.141  38.065 112.103  1.00 57.67           C
ATOM   2280  O   LYS A 314       0.578  38.489 113.111  1.00 57.17           O
ATOM   2281  CB  LYS A 314       0.675  35.772 111.310  1.00 82.41           C
ATOM   2282  CG  LYS A 314      -0.131  34.821 110.436  1.00107.34           C
ATOM   2283  CD  LYS A 314       0.257  33.378 110.710  1.00121.94           C
ATOM   2284  CE  LYS A 314      -0.587  32.410 109.897  1.00128.64           C
ATOM   2285  NZ  LYS A 314      -0.280  30.993 110.247  1.00133.21           N
ATOM   2286  N   ASP A 315       2.426  38.267 111.840  1.00 54.28           N
ATOM   2287  CA  ASP A 315       3.304  39.000 112.751  1.00 54.88           C
ATOM   2288  C   ASP A 315       3.004  40.490 112.850  1.00 53.15           C
ATOM   2289  O   ASP A 315       3.227  41.108 113.891  1.00 57.46           O
ATOM   2290  CB  ASP A 315       4.753  38.807 112.317  1.00 53.56           C
ATOM   2291  CG  ASP A 315       5.064  37.365 111.983  1.00 53.59           C
ATOM   2292  OD1 ASP A 315       5.195  36.550 112.924  1.00 45.91           O
ATOM   2293  OD2 ASP A 315       5.162  37.051 110.775  1.00 56.89           O
ATOM   2294  N   VAL A 316       2.513  41.072 111.764  1.00 44.71           N
ATOM   2295  CA  VAL A 316       2.200  42.491 111.772  1.00 43.05           C
ATOM   2296  C   VAL A 316       0.828  42.730 112.393  1.00 41.13           C
ATOM   2297  O   VAL A 316       0.645  43.676 113.168  1.00 48.44           O
ATOM   2298  CB  VAL A 316       2.239  43.065 110.351  1.00 43.95           C
ATOM   2299  CG1 VAL A 316       1.943  44.552 110.380  1.00 47.89           C
ATOM   2300  CG2 VAL A 316       3.611  42.817 109.740  1.00 47.49           C
ATOM   2301  N   ILE A 317      -0.132  41.871 112.059  1.00 34.07           N
ATOM   2302  CA  ILE A 317      -1.468  41.999 112.618  1.00 30.90           C
ATOM   2303  C   ILE A 317      -1.337  41.899 114.128  1.00 38.79           C
ATOM   2304  O   ILE A 317      -2.001  42.626 114.869  1.00 40.90           O
ATOM   2305  CB  ILE A 317      -2.379  40.878 112.164  1.00 33.91           C
ATOM   2306  CG1 ILE A 317      -2.279  40.715 110.657  1.00 45.06           C
ATOM   2307  CG2 ILE A 317      -3.797  41.187 112.572  1.00 24.03           C
ATOM   2308  CD1 ILE A 317      -3.069  39.541 110.118  1.00 58.36           C
ATOM   2309  N   ALA A 318      -0.475  40.981 114.564  1.00 43.73           N
ATOM   2310  CA  ALA A 318      -0.211  40.746 115.978  1.00 45.24           C
ATOM   2311  C   ALA A 318       0.210  42.043 116.640  1.00 41.00           C
ATOM   2312  O   ALA A 318      -0.322  42.423 117.681  1.00 47.27           O
ATOM   2313  CB  ALA A 318       0.880  39.711 116.139  1.00 50.89           C
ATOM   2314  N   ILE A 319       1.177  42.726 116.046  1.00 35.38           N
ATOM   2315  CA  ILE A 319       1.617  43.989 116.611  1.00 37.59           C
ATOM   2316  C   ILE A 319       0.436  44.946 116.776  1.00 42.37           C
ATOM   2317  O   ILE A 319       0.174  45.410 117.886  1.00 51.31           O
ATOM   2318  CB  ILE A 319       2.701  44.630 115.736  1.00 33.50           C
ATOM   2319  CG1 ILE A 319       4.004  43.851 115.906  1.00 36.32           C
ATOM   2320  CG2 ILE A 319       2.907  46.080 116.121  1.00 24.15           C
ATOM   2321  CD1 ILE A 319       5.096  44.312 115.001  1.00 50.54           C
ATOM   2322  N   ASN A 320      -0.279  45.226 115.687  1.00 41.39           N
ATOM   2323  CA  ASN A 320      -1.430  46.118 115.752  1.00 44.04           C
ATOM   2324  C   ASN A 320      -2.487  45.624 116.751  1.00 42.92           C
ATOM   2325  O   ASN A 320      -3.166  46.432 117.402  1.00 42.62           O
ATOM   2326  CB  ASN A 320      -2.052  46.264 114.360  1.00 48.77           C
ATOM   2327  CG  ASN A 320      -3.400  46.972 114.389  1.00 49.02           C
ATOM   2328  OD1 ASN A 320      -4.366  46.460 114.947  1.00 50.55           O
ATOM   2329  ND2 ASN A 320      -3.468  48.153 113.781  1.00 48.27           N
ATOM   2330  N   GLN A 321      -2.614  44.300 116.865  1.00 41.27           N
ATOM   2331  CA  GLN A 321      -3.575  43.655 117.770  1.00 42.11           C
ATOM   2332  C   GLN A 321      -3.035  43.442 119.185  1.00 37.90           C
ATOM   2333  O   GLN A 321      -3.636  42.716 119.991  1.00 38.05           O
ATOM   2334  CB  GLN A 321      -3.999  42.297 117.213  1.00 47.40           C
ATOM   2335  CG  GLN A 321      -5.033  42.376 116.132  1.00 44.04           C
ATOM   2336  CD  GLN A 321      -6.282  43.051 116.621  1.00 38.41           C
ATOM   2337  OE1 GLN A 321      -6.794  42.726 117.686  1.00 20.43           O
ATOM   2338  NE2 GLN A 321      -6.785  43.995 115.843  1.00 37.61           N
ATOM   2339  N   ASP A 322      -1.898  44.067 119.479  1.00 34.86           N
ATOM   2340  CA  ASP A 322      -1.281  43.948 120.794  1.00 33.53           C
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ATOM   2341  C   ASP A 322      -2.363  44.148 121.849  1.00 29.16           C
ATOM   2342  O   ASP A 322      -3.154  45.089 121.773  1.00 29.97           O
ATOM   2343  CB  ASP A 322      -0.175  44.993 120.944  1.00 40.79           C
ATOM   2344  CG  ASP A 322       0.655  44.782 122.180  1.00 43.03           C
ATOM   2345  OD1 ASP A 322       1.207  43.675 122.350  1.00 32.44           O
ATOM   2346  OD2 ASP A 322       0.757  45.735 122.972  1.00 51.49           O
ATOM   2347  N   PRO A 323      -2.405  43.258 122.846  1.00 26.74           N
ATOM   2348  CA  PRO A 323      -3.383  43.290 123.935  1.00 31.97           C
ATOM   2349  C   PRO A 323      -3.221  44.500 124.811  1.00 35.44           C
ATOM   2350  O   PRO A 323      -4.189  45.007 125.369  1.00 43.01           O
ATOM   2351  CB  PRO A 323      -3.083  42.010 124.691  1.00 39.61           C
ATOM   2352  CG  PRO A 323      -1.584  41.978 124.624  1.00 39.47           C
ATOM   2353  CD  PRO A 323      -1.309  42.325 123.163  1.00 35.67           C
ATOM   2354  N   LEU A 324      -1.979  44.947 124.925  1.00 36.88           N
ATOM   2355  CA  LEU A 324      -1.653  46.084 125.758  1.00 40.93           C
ATOM   2356  C   LEU A 324      -2.498  47.299 125.407  1.00 40.56           C
ATOM   2357  O   LEU A 324      -3.158  47.872 126.275  1.00 45.00           O
ATOM   2358  CB  LEU A 324      -0.169  46.427 125.628  1.00 46.67           C
ATOM   2359  CG  LEU A 324       0.519  46.892 126.915  1.00 54.17           C
ATOM   2360  CD1 LEU A 324       1.848  47.528 126.556  1.00 62.38           C
ATOM   2361  CD2 LEU A 324      -0.355  47.894 127.656  1.00 53.61           C
ATOM   2362  N   GLY A 325      -2.463  47.699 124.139  1.00 38.97           N
ATOM   2363  CA  GLY A 325      -3.242  48.846 123.708  1.00 41.98           C
ATOM   2364  C   GLY A 325      -2.527  50.166 123.912  1.00 47.29           C
ATOM   2365  O   GLY A 325      -3.148  51.170 124.264  1.00 52.51           O
ATOM   2366  N   LYS A 326      -1.217  50.163 123.696  1.00 48.67           N
ATOM   2367  CA  LYS A 326      -0.414  51.368 123.850  1.00 49.67           C
ATOM   2368  C   LYS A 326      -0.066  51.915 122.476  1.00 49.39           C
ATOM   2369  O   LYS A 326       0.798  51.373 121.801  1.00 55.07           O
ATOM   2370  CB  LYS A 326       0.862  51.038 124.622  1.00 56.04           C
ATOM   2371  CG  LYS A 326       0.628  50.710 126.086  1.00 73.85           C
ATOM   2372  CD  LYS A 326       0.246  51.950 126.890  1.00 82.94           C
ATOM   2373  CE  LYS A 326       1.430  52.903 127.054  1.00 88.67           C
ATOM   2374  NZ  LYS A 326       1.079  54.124 127.836  1.00 93.02           N
ATOM   2375  N   GLN A 327      -0.724  52.998 122.071  1.00 48.25           N
ATOM   2376  CA  GLN A 327      -0.491  53.573 120.746  1.00 50.19           C
ATOM   2377  C   GLN A 327       0.920  54.090 120.541  1.00 45.92           C
ATOM   2378  O   GLN A 327       1.492  54.715 121.423  1.00 47.59           O
ATOM   2379  CB  GLN A 327      -1.504  54.687 120.457  1.00 46.44           C
ATOM   2380  CG  GLN A 327      -1.652  55.028 118.977  1.00 36.98           C
ATOM   2381  CD  GLN A 327      -3.034  55.579 118.640  1.00 41.12           C
ATOM   2382  OE1 GLN A 327      -4.041  54.862 118.680  1.00 47.47           O
ATOM   2383  NE2 GLN A 327      -3.085  56.858 118.309  1.00 34.38           N
ATOM   2384  N   GLY A 328       1.470  53.820 119.361  1.00 36.61           N
ATOM   2385  CA  GLY A 328       2.818  54.249 119.043  1.00 29.84           C
ATOM   2386  C   GLY A 328       2.895  55.741 118.822  1.00 27.35           C
ATOM   2387  O   GLY A 328       1.923  56.463 119.057  1.00 29.82           O
ATOM   2388  N   TYR A 329       4.050  56.202 118.358  1.00 29.39           N
ATOM   2389  CA  TYR A 329       4.268  57.622 118.118  1.00 35.23           C
ATOM   2390  C   TYR A 329       5.595  57.878 117.421  1.00 37.00           C
ATOM   2391  O   TYR A 329       6.515  57.060 117.470  1.00 36.29           O
ATOM   2392  CB  TYR A 329       4.276  58.369 119.443  1.00 38.53           C
ATOM   2393  CG  TYR A 329       5.275  57.798 120.422  1.00 46.66           C
ATOM   2394  CD1 TYR A 329       6.643  57.993 120.250  1.00 48.72           C
ATOM   2395  CD2 TYR A 329       4.850  57.025 121.508  1.00 51.95           C
ATOM   2396  CE1 TYR A 329       7.562  57.430 121.136  1.00 49.58           C
ATOM   2397  CE2 TYR A 329       5.759  56.461 122.397  1.00 51.04           C
ATOM   2398  CZ  TYR A 329       7.111  56.665 122.207  1.00 46.71           C
ATOM   2399  OH  TYR A 329       8.015  56.100 123.078  1.00 44.19           O
ATOM   2400  N   GLN A 330       5.693  59.036 116.787  1.00 37.71           N
ATOM   2401  CA  GLN A 330       6.915  59.419 116.108  1.00 32.77           C
ATOM   2402  C   GLN A 330       7.949  59.763 117.168  1.00 34.91           C
ATOM   2403  O   GLN A 330       7.664  60.480 118.118  1.00 29.29           O
ATOM   2404  CB  GLN A 330       6.661  60.636 115.228  1.00 29.38           C
ATOM   2405  CG  GLN A 330       7.876  61.132 114.480  1.00 37.88           C
ATOM   2406  CD  GLN A 330       7.614  62.464 113.828  1.00 50.08           C
ATOM   2407  OE1 GLN A 330       7.393  63.461 114.508  1.00 50.66           O
ATOM   2408  NE2 GLN A 330       7.621  62.489 112.507  1.00 52.87           N
ATOM   2409  N   LEU A 331       9.146  59.231 117.017  1.00 40.46           N
ATOM   2410  CA  LEU A 331      10.191  59.526 117.961  1.00 44.60           C
ATOM   2411  C   LEU A 331      11.053  60.640 117.399  1.00 49.33           C
ATOM   2412  O   LEU A 331      11.194  61.701 118.016  1.00 52.75           O
ATOM   2413  CB  LEU A 331      11.037  58.283 118.216  1.00 45.31           C
ATOM   2414  CG  LEU A 331      12.287  58.486 119.082  1.00 48.54           C
ATOM   2415  CD1 LEU A 331      12.005  59.479 120.190  1.00 55.41           C
ATOM   2416  CD2 LEU A 331      12.735  57.150 119.650  1.00 52.33           C
ATOM   2417  N   ARG A 332      11.603  60.400 116.211  1.00 53.70           N
ATOM   2418  CA  ARG A 332      12.473  61.361 115.550  1.00 60.63           C
ATOM   2419  C   ARG A 332      11.950  62.002 114.262  1.00 60.77           C
ATOM   2420  O   ARG A 332      11.004  61.528 113.632  1.00 55.57           O
ATOM   2421  CB  ARG A 332      13.826  60.707 115.267  1.00 65.11           C
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ATOM   2422  CG  ARG A 332      14.770  60.696 116.450  1.00 69.71           C
ATOM   2423  CD  ARG A 332      16.044  59.921 116.147  1.00 69.46           C
ATOM   2424  NE  ARG A 332      17.140  60.259 117.057  1.00 75.06           N
ATOM   2425  CZ  ARG A 332      17.059  60.232 118.384  1.00 81.31           C
ATOM   2426  NH1 ARG A 332      15.927  59.882 118.981  1.00 82.93           N
ATOM   2427  NH2 ARG A 332      18.112  60.563 119.120  1.00 85.14           N
ATOM   2428  N   GLN A 333      12.610  63.092 113.890  1.00 65.78           N
ATOM   2429  CA  GLN A 333      12.296  63.855 112.701  1.00 67.90           C
ATOM   2430  C   GLN A 333      13.634  64.097 112.058  1.00 71.18           C
ATOM   2431  O   GLN A 333      14.632  63.535 112.479  1.00 68.31           O
ATOM   2432  CB  GLN A 333      11.707  65.201 113.085  1.00 72.61           C
ATOM   2433  CG  GLN A 333      10.993  65.880 111.956  1.00 79.18           C
ATOM   2434  CD  GLN A 333       9.729  65.146 111.594  1.00 86.56           C
ATOM   2435  OE1 GLN A 333       9.004  65.538 110.685  1.00 93.40           O
ATOM   2436  NE2 GLN A 333       9.455  64.067 112.312  1.00 88.10           N
ATOM   2437  N   GLY A 334      13.655  64.945 111.042  1.00 79.40           N
ATOM   2438  CA  GLY A 334      14.909  65.269 110.384  1.00 87.47           C
ATOM   2439  C   GLY A 334      15.453  64.373 109.285  1.00 87.45           C
ATOM   2440  O   GLY A 334      15.146  63.179 109.202  1.00 84.44           O
ATOM   2441  N   ASP A 335      16.284  64.982 108.440  1.00 88.86           N
ATOM   2442  CA  ASP A 335      16.920  64.309 107.308  1.00 85.39           C
ATOM   2443  C   ASP A 335      15.968  63.347 106.612  1.00 77.33           C
ATOM   2444  O   ASP A 335      16.228  62.146 106.544  1.00 74.37           O
ATOM   2445  CB  ASP A 335      18.159  63.544 107.778  1.00 95.54           C
ATOM   2446  CG  ASP A 335      19.155  63.309 106.661  1.00100.21           C
ATOM   2447  OD1 ASP A 335      19.861  64.273 106.289  1.00102.26           O
ATOM   2448  OD2 ASP A 335      19.224  62.168 106.150  1.00104.80           O
ATOM   2449  N   ASN A 336      14.874  63.890 106.088  1.00 69.33           N
ATOM   2450  CA  ASN A 336      13.866  63.090 105.411  1.00 62.56           C
ATOM   2451  C   ASN A 336      13.805  61.697 105.990  1.00 56.64           C
ATOM   2452  O   ASN A 336      13.968  60.706 105.285  1.00 56.81           O
ATOM   2453  CB  ASN A 336      14.153  63.021 103.920  1.00 64.42           C
ATOM   2454  CG  ASN A 336      13.485  64.129 103.172  1.00 75.47           C
ATOM   2455  OD1 ASN A 336      12.306  64.400 103.395  1.00 80.59           O
ATOM   2456  ND2 ASN A 336      14.220  64.782 102.277  1.00 82.36           N
ATOM   2457  N   PHE A 337      13.562  61.636 107.291  1.00 45.38           N
ATOM   2458  CA  PHE A 337      13.502  60.373 107.986  1.00 32.52           C
ATOM   2459  C   PHE A 337      12.569  60.501 109.172  1.00 31.65           C
ATOM   2460  O   PHE A 337      12.612  61.499 109.890  1.00 41.04           O
ATOM   2461  CB  PHE A 337      14.901  59.984 108.464  1.00 35.90           C
ATOM   2462  CG  PHE A 337      15.625  59.044 107.538  1.00 41.00           C
ATOM   2463  CD1 PHE A 337      16.977  59.219 107.268  1.00 43.16           C
ATOM   2464  CD2 PHE A 337      14.966  57.962 106.962  1.00 43.25           C
ATOM   2465  CE1 PHE A 337      17.666  58.331 106.440  1.00 46.01           C
ATOM   2466  CE2 PHE A 337      15.644  57.072 106.136  1.00 45.63           C
ATOM   2467  CZ  PHE A 337      16.999  57.257 105.874  1.00 45.74           C
ATOM   2468  N   GLU A 338      11.716  59.502 109.367  1.00 26.29           N
ATOM   2469  CA  GLU A 338      10.786  59.502 110.481  1.00 29.69           C
ATOM   2470  C   GLU A 338      10.962  58.218 111.252  1.00 23.34           C
ATOM   2471  O   GLU A 338      10.997  57.150 110.656  1.00 27.49           O
ATOM   2472  CB  GLU A 338       9.343  59.581 109.980  1.00 34.11           C
ATOM   2473  CG  GLU A 338       8.840  60.986 109.680  1.00 38.07           C
ATOM   2474  CD  GLU A 338       7.316  61.070 109.589  1.00 43.85           C
ATOM   2475  OE1 GLU A 338       6.625  60.777 110.597  1.00 46.32           O
ATOM   2476  OE2 GLU A 338       6.809  61.436 108.508  1.00 47.89           O
ATOM   2477  N   VAL A 339      11.067  58.304 112.572  1.00 12.61           N
ATOM   2478  CA  VAL A 339      11.209  57.093 113.363  1.00 12.26           C
ATOM   2479  C   VAL A 339      10.028  56.913 114.297  1.00  9.82           C
ATOM   2480  O   VAL A 339       9.867  57.674 115.257  1.00 17.52           O
ATOM   2481  CB  VAL A 339      12.488  57.113 114.214  1.00 16.72           C
ATOM   2482  CG1 VAL A 339      12.474  55.945 115.191  1.00 18.37           C
ATOM   2483  CG2 VAL A 339      13.712  57.046 113.318  1.00 24.35           C
ATOM   2484  N   TRP A 340       9.209  55.902 114.035  1.00  9.60           N
ATOM   2485  CA  TRP A 340       8.056  55.644 114.889  1.00 17.16           C
ATOM   2486  C   TRP A 340       8.305  54.434 115.790  1.00 17.17           C
ATOM   2487  O   TRP A 340       9.208  53.638 115.532  1.00 16.55           O
ATOM   2488  CB  TRP A 340       6.816  55.416 114.029  1.00 25.15           C
ATOM   2489  CG  TRP A 340       6.367  56.646 113.324  1.00 32.90           C
ATOM   2490  CD1 TRP A 340       7.086  57.387 112.440  1.00 33.98           C
ATOM   2491  CD2 TRP A 340       5.110  57.309 113.473  1.00 41.04           C
ATOM   2492  NE1 TRP A 340       6.358  58.475 112.026  1.00 42.03           N
ATOM   2493  CE2 TRP A 340       5.140  58.452 112.644  1.00 46.80           C
ATOM   2494  CE3 TRP A 340       3.961  57.051 114.226  1.00 47.74           C
ATOM   2495  CZ2 TRP A 340       4.070  59.338 112.550  1.00 56.89           C
ATOM   2496  CZ3 TRP A 340       2.896  57.933 114.134  1.00 47.15           C
ATOM   2497  CH2 TRP A 340       2.958  59.064 113.300  1.00 55.77           C
ATOM   2498  N   GLU A 341       7.513  54.304 116.852  1.00 16.97           N
ATOM   2499  CA  GLU A 341       7.650  53.182 117.784  1.00 17.90           C
ATOM   2500  C   GLU A 341       6.443  53.057 118.719  1.00 15.85           C
ATOM   2501  O   GLU A 341       5.845  54.049 119.150  1.00 17.73           O
ATOM   2502  CB  GLU A 341       8.919  53.329 118.632  1.00 18.18           C
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ATOM   2503  CG  GLU A 341       8.721  54.174 119.882  1.00 36.58           C
ATOM   2504  CD  GLU A 341      10.016  54.417 120.644  1.00 40.66           C
ATOM   2505  OE1 GLU A 341      10.732  53.440 120.940  1.00 43.84           O
ATOM   2506  OE2 GLU A 341      10.323  55.586 120.963  1.00 45.95           O
ATOM   2507  N   ARG A 342       6.099  51.817 119.028  1.00 20.21           N
ATOM   2508  CA  ARG A 342       4.985  51.527 119.908  1.00 27.65           C
ATOM   2509  C   ARG A 342       5.438  50.477 120.918  1.00 31.87           C
ATOM   2510  O   ARG A 342       6.049  49.473 120.545  1.00 42.57           O
ATOM   2511  CB  ARG A 342       3.800  50.966 119.105  1.00 25.33           C
ATOM   2512  CG  ARG A 342       2.701  50.375 119.985  1.00 25.09           C
ATOM   2513  CD  ARG A 342       1.752  49.448 119.237  1.00 24.25           C
ATOM   2514  NE  ARG A 342       0.577  49.103 120.044  1.00 26.47           N
ATOM   2515  CZ  ARG A 342      -0.452  48.389 119.598  1.00 30.27           C
ATOM   2516  NH1 ARG A 342      -0.440  47.942 118.353  1.00 31.99           N
ATOM   2517  NH2 ARG A 342      -1.506  48.147 120.371  1.00 34.96           N
ATOM   2518  N   PRO A 343       5.181  50.702 122.211  1.00 26.00           N
ATOM   2519  CA  PRO A 343       5.611  49.668 123.148  1.00 21.89           C
ATOM   2520  C   PRO A 343       4.547  48.578 123.068  1.00 27.99           C
ATOM   2521  O   PRO A 343       3.358  48.877 122.905  1.00 26.98           O
ATOM   2522  CB  PRO A 343       5.603  50.396 124.474  1.00  8.64           C
ATOM   2523  CG  PRO A 343       4.455  51.318 124.316  1.00 11.85           C
ATOM   2524  CD  PRO A 343       4.640  51.869 122.923  1.00 20.11           C
ATOM   2525  N   LEU A 344       4.970  47.322 123.156  1.00 34.97           N
ATOM   2526  CA  LEU A 344       4.040  46.195 123.085  1.00 39.22           C
ATOM   2527  C   LEU A 344       3.918  45.574 124.477  1.00 46.77           C
ATOM   2528  O   LEU A 344       4.025  46.274 125.478  1.00 51.96           O
ATOM   2529  CB  LEU A 344       4.570  45.162 122.098  1.00 30.94           C
ATOM   2530  CG  LEU A 344       5.077  45.857 120.842  1.00 35.48           C
ATOM   2531  CD1 LEU A 344       5.746  44.857 119.914  1.00 43.68           C
ATOM   2532  CD2 LEU A 344       3.902  46.557 120.172  1.00 44.42           C
ATOM   2533  N   SER A 345       3.690  44.267 124.535  1.00 51.33           N
ATOM   2534  CA  SER A 345       3.577  43.572 125.805  1.00 57.81           C
ATOM   2535  C   SER A 345       4.868  42.798 125.989  1.00 57.31           C
ATOM   2536  O   SER A 345       5.555  42.511 125.015  1.00 54.00           O
ATOM   2537  CB  SER A 345       2.399  42.602 125.776  1.00 65.41           C
ATOM   2538  OG  SER A 345       1.220  43.248 125.356  1.00 72.59           O
ATOM   2539  N   GLY A 346       5.203  42.475 127.233  1.00 58.68           N
ATOM   2540  CA  GLY A 346       6.409  41.715 127.507  1.00 63.75           C
ATOM   2541  C   GLY A 346       7.730  42.381 127.180  1.00 66.32           C
ATOM   2542  O   GLY A 346       8.646  41.720 126.694  1.00 68.08           O
ATOM   2543  N   LEU A 347       7.831  43.680 127.446  1.00 67.45           N
ATOM   2544  CA  LEU A 347       9.061  44.434 127.194  1.00 70.86           C
ATOM   2545  C   LEU A 347       9.484  44.433 125.727  1.00 71.91           C
ATOM   2546  O   LEU A 347      10.639  44.721 125.398  1.00 78.43           O
ATOM   2547  CB  LEU A 347      10.196  43.870 128.049  1.00 77.11           C
ATOM   2548  CG  LEU A 347       9.956  43.870 129.559  1.00 85.78           C
ATOM   2549  CD1 LEU A 347      11.102  43.153 130.256  1.00 94.76           C
ATOM   2550  CD2 LEU A 347       9.829  45.302 130.055  1.00 88.27           C
ATOM   2551  N   ALA A 348       8.543  44.097 124.853  1.00 66.88           N
ATOM   2552  CA  ALA A 348       8.804  44.058 123.427  1.00 55.04           C
ATOM   2553  C   ALA A 348       8.354  45.368 122.809  1.00 41.31           C
ATOM   2554  O   ALA A 348       7.332  45.923 123.196  1.00 35.51           O
ATOM   2555  CB  ALA A 348       8.062  42.893 122.797  1.00 67.28           C
ATOM   2556  N   TRP A 349       9.124  45.864 121.850  1.00 32.83           N
ATOM   2557  CA  TRP A 349       8.785  47.116 121.202  1.00 27.38           C
ATOM   2558  C   TRP A 349       8.779  47.022 119.687  1.00 28.15           C
ATOM   2559  O   TRP A 349       9.598  46.318 119.095  1.00 30.66           O
ATOM   2560  CB  TRP A 349       9.769  48.191 121.622  1.00 27.05           C
ATOM   2561  CG  TRP A 349       9.634  48.610 123.031  1.00 26.81           C
ATOM   2562  CD1 TRP A 349       9.686  47.808 124.145  1.00 38.79           C
ATOM   2563  CD2 TRP A 349       9.489  49.947 123.505  1.00 19.14           C
ATOM   2564  NE1 TRP A 349       9.586  48.572 125.285  1.00 34.04           N
ATOM   2565  CE2 TRP A 349       9.464  49.889 124.920  1.00 28.66           C
ATOM   2566  CE3 TRP A 349       9.380  51.191 122.875  1.00 11.37           C
ATOM   2567  CZ2 TRP A 349       9.335  51.035 125.711  1.00 36.09           C
ATOM   2568  CZ3 TRP A 349       9.254  52.320 123.649  1.00 29.51           C
ATOM   2569  CH2 TRP A 349       9.232  52.239 125.057  1.00 39.76           C
ATOM   2570  N   ALA A 350       7.847  47.737 119.064  1.00 24.57           N
ATOM   2571  CA  ALA A 350       7.735  47.768 117.612  1.00 24.86           C
ATOM   2572  C   ALA A 350       8.318  49.105 117.157  1.00 28.08           C
ATOM   2573  O   ALA A 350       8.108  50.125 117.814  1.00 35.08           O
ATOM   2574  CB  ALA A 350       6.273  47.661 117.203  1.00 24.91           C
ATOM   2575  N   VAL A 351       9.049  49.105 116.042  1.00 28.62           N
ATOM   2576  CA  VAL A 351       9.657  50.335 115.537  1.00 29.07           C
ATOM   2577  C   VAL A 351       9.529  50.514 114.028  1.00 32.11           C
ATOM   2578  O   VAL A 351       9.734  49.573 113.253  1.00 31.37           O
ATOM   2579  CB  VAL A 351      11.156  50.415 115.887  1.00 30.43           C
ATOM   2580  CG1 VAL A 351      11.696  51.764 115.487  1.00 26.13           C
ATOM   2581  CG2 VAL A 351      11.367  50.186 117.365  1.00 22.49           C
ATOM   2582  N   ALA A 352       9.217  51.741 113.617  1.00 28.58           N
ATOM   2583  CA  ALA A 352       9.055  52.060 112.199  1.00 29.67           C
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ATOM   2584  C   ALA A 352      10.169  52.966 111.681  1.00 23.48           C
ATOM   2585  O   ALA A 352      10.739  53.783 112.420  1.00 15.30           O
ATOM   2586  CB  ALA A 352       7.687  52.713 111.949  1.00 39.82           C
ATOM   2587  N   MET A 353      10.471  52.802 110.399  1.00 21.96           N
ATOM   2588  CA  MET A 353      11.510  53.576 109.744  1.00 24.60           C
ATOM   2589  C   MET A 353      11.036  53.980 108.336  1.00 24.95           C
ATOM   2590  O   MET A 353      11.119  53.202 107.379  1.00 20.54           O
ATOM   2591  CB  MET A 353      12.798  52.748 109.684  1.00 33.80           C
ATOM   2592  CG  MET A 353      13.978  53.367 110.422  1.00 43.10           C
ATOM   2593  SD  MET A 353      14.818  52.205 111.503  1.00 47.21           S
ATOM   2594  CE  MET A 353      15.472  51.008 110.336  1.00 53.94           C
ATOM   2595  N   ILE A 354      10.533  55.211 108.233  1.00 22.56           N
ATOM   2596  CA  ILE A 354      10.009  55.758 106.985  1.00 19.74           C
ATOM   2597  C   ILE A 354      11.007  56.662 106.278  1.00 22.46           C
ATOM   2598  O   ILE A 354      11.543  57.594 106.878  1.00 28.82           O
ATOM   2599  CB  ILE A 354       8.772  56.616 107.235  1.00 13.71           C
ATOM   2600  CG1 ILE A 354       7.889  55.980 108.297  1.00  5.73           C
ATOM   2601  CG2 ILE A 354       8.004  56.756 105.956  1.00 19.87           C
ATOM   2602  CD1 ILE A 354       6.901  56.944 108.893  1.00 21.25           C
ATOM   2603  N   ASN A 355      11.245  56.393 104.998  1.00 23.27           N
ATOM   2604  CA  ASN A 355      12.155  57.214 104.220  1.00 34.18           C
ATOM   2605  C   ASN A 355      11.287  58.190 103.441  1.00 36.71           C
ATOM   2606  O   ASN A 355      10.781  57.876 102.373  1.00 32.22           O
ATOM   2607  CB  ASN A 355      13.002  56.348 103.272  1.00 39.85           C
ATOM   2608  CG  ASN A 355      13.831  57.177 102.286  1.00 36.79           C
ATOM   2609  OD1 ASN A 355      14.328  58.253 102.616  1.00 35.57           O
ATOM   2610  ND2 ASN A 355      13.992  56.659 101.073  1.00 25.45           N
ATOM   2611  N   ARG A 356      11.097  59.377 104.000  1.00 35.71           N
ATOM   2612  CA  ARG A 356      10.289  60.385 103.346  1.00 27.94           C
ATOM   2613  C   ARG A 356      10.969  61.058 102.167  1.00 33.57           C
ATOM   2614  O   ARG A 356      10.556  62.146 101.772  1.00 39.39           O
ATOM   2615  CB  ARG A 356       9.854  61.444 104.360  1.00 15.59           C
ATOM   2616  CG  ARG A 356       8.787  60.954 105.318  1.00 14.97           C
ATOM   2617  CD  ARG A 356       7.551  60.451 104.568  1.00 31.33           C
ATOM   2618  NE  ARG A 356       6.684  61.508 104.033  1.00 48.53           N
ATOM   2619  CZ  ARG A 356       6.017  62.388 104.781  1.00 50.62           C
ATOM   2620  NH1 ARG A 356       6.113  62.357 106.102  1.00 48.45           N
ATOM   2621  NH2 ARG A 356       5.235  63.294 104.211  1.00 48.50           N
ATOM   2622  N   GLN A 357      11.994  60.427 101.593  1.00 35.04           N
ATOM   2623  CA  GLN A 357      12.691  61.032 100.456  1.00 33.28           C
ATOM   2624  C   GLN A 357      12.197  60.548  99.090  1.00 31.79           C
ATOM   2625  O   GLN A 357      12.697  59.568  98.540  1.00 32.87           O
ATOM   2626  CB  GLN A 357      14.188  60.793 100.585  1.00 36.36           C
ATOM   2627  CG  GLN A 357      14.975  61.407  99.464  1.00 56.02           C
ATOM   2628  CD  GLN A 357      16.321  61.930  99.914  1.00 61.03           C
ATOM   2629  OE1 GLN A 357      16.396  62.821 100.755  1.00 63.53           O
ATOM   2630  NE2 GLN A 357      17.390  61.379  99.359  1.00 65.54           N
ATOM   2631  N   GLU A 358      11.213  61.261  98.552  1.00 31.67           N
ATOM   2632  CA  GLU A 358      10.571  60.942  97.275  1.00 37.21           C
ATOM   2633  C   GLU A 358      11.458  60.598  96.072  1.00 35.86           C
ATOM   2634  O   GLU A 358      10.998  59.943  95.132  1.00 36.71           O
ATOM   2635  CB  GLU A 358       9.655  62.102  96.879  1.00 46.42           C
ATOM   2636  CG  GLU A 358       8.617  62.496  97.923  1.00 49.92           C
ATOM   2637  CD  GLU A 358       7.405  61.587  97.919  1.00 51.00           C
ATOM   2638  OE1 GLU A 358       6.927  61.240  96.817  1.00 54.14           O
ATOM   2639  OE2 GLU A 358       6.922  61.233  99.012  1.00 56.01           O
ATOM   2640  N   ILE A 359      12.715  61.034  96.090  1.00 37.36           N
ATOM   2641  CA  ILE A 359      13.615  60.785  94.961  1.00 38.55           C
ATOM   2642  C   ILE A 359      14.916  60.060  95.320  1.00 33.78           C
ATOM   2643  O   ILE A 359      15.294  59.970  96.485  1.00 26.01           O
ATOM   2644  CB  ILE A 359      13.948  62.120  94.259  1.00 48.55           C
ATOM   2645  CG1 ILE A 359      14.698  61.866  92.951  1.00 50.62           C
ATOM   2646  CG2 ILE A 359      14.741  63.018  95.206  1.00 43.41           C
ATOM   2647  CD1 ILE A 359      14.975  63.126  92.160  1.00 63.56           C
ATOM   2648  N   GLY A 360      15.595  59.537  94.306  1.00 35.67           N
ATOM   2649  CA  GLY A 360      16.837  58.821  94.538  1.00 49.08           C
ATOM   2650  C   GLY A 360      16.650  57.318  94.690  1.00 53.38           C
ATOM   2651  O   GLY A 360      15.933  56.679  93.918  1.00 55.36           O
ATOM   2652  N   GLY A 361      17.307  56.749  95.692  1.00 50.24           N
ATOM   2653  CA  GLY A 361      17.205  55.322  95.919  1.00 49.48           C
ATOM   2654  C   GLY A 361      17.064  55.017  97.395  1.00 51.09           C
ATOM   2655  O   GLY A 361      16.636  55.889  98.152  1.00 59.46           O
ATOM   2656  N   PRO A 362      17.419  53.796  97.842  1.00 49.93           N
ATOM   2657  CA  PRO A 362      17.316  53.405  99.246  1.00 51.63           C
ATOM   2658  C   PRO A 362      18.457  54.015 100.026  1.00 54.61           C
ATOM   2659  O   PRO A 362      19.619  53.748  99.725  1.00 61.64           O
ATOM   2660  CB  PRO A 362      17.420  51.891  99.177  1.00 46.25           C
ATOM   2661  CG  PRO A 362      18.449  51.704  98.121  1.00 48.61           C
ATOM   2662  CD  PRO A 362      18.021  52.706  97.054  1.00 50.22           C
ATOM   2663  N   ARG A 363      18.124  54.843 101.010  1.00 51.09           N
ATOM   2664  CA  ARG A 363      19.138  55.479 101.822  1.00 47.56           C
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ATOM   2665  C   ARG A 363      19.375  54.587 103.018  1.00 46.90           C
ATOM   2666  O   ARG A 363      18.713  53.562 103.150  1.00 47.57           O
ATOM   2667  CB  ARG A 363      18.664  56.878 102.217  1.00 51.44           C
ATOM   2668  CG  ARG A 363      18.232  57.642 100.992  1.00 44.14           C
ATOM   2669  CD  ARG A 363      18.212  59.136 101.160  1.00 50.08           C
ATOM   2670  NE  ARG A 363      17.069  59.585 101.936  1.00 60.37           N
ATOM   2671  CZ  ARG A 363      17.117  59.825 103.238  1.00 67.25           C
ATOM   2672  NH1 ARG A 363      18.257  59.655 103.895  1.00 62.40           N
ATOM   2673  NH2 ARG A 363      16.035  60.243 103.881  1.00 78.35           N
ATOM   2674  N   SER A 364      20.322  54.944 103.874  1.00 47.63           N
ATOM   2675  CA  SER A 364      20.572  54.123 105.046  1.00 52.53           C
ATOM   2676  C   SER A 364      20.457  54.967 106.297  1.00 54.18           C
ATOM   2677  O   SER A 364      20.946  56.093 106.341  1.00 60.34           O
ATOM   2678  CB  SER A 364      21.958  53.479 104.976  1.00 59.39           C
ATOM   2679  OG  SER A 364      22.984  54.452 104.893  1.00 72.85           O
ATOM   2680  N   TYR A 365      19.780  54.429 107.303  1.00 55.27           N
ATOM   2681  CA  TYR A 365      19.621  55.135 108.557  1.00 57.93           C
ATOM   2682  C   TYR A 365      20.214  54.282 109.674  1.00 57.07           C
ATOM   2683  O   TYR A 365      20.069  53.058 109.685  1.00 56.96           O
ATOM   2684  CB  TYR A 365      18.147  55.431 108.832  1.00 57.81           C
ATOM   2685  CG  TYR A 365      17.963  56.442 109.937  1.00 64.43           C
ATOM   2686  CD1 TYR A 365      18.372  57.763 109.769  1.00 72.40           C
ATOM   2687  CD2 TYR A 365      17.428  56.070 111.179  1.00 65.59           C
ATOM   2688  CE1 TYR A 365      18.257  58.698 110.814  1.00 77.79           C
ATOM   2689  CE2 TYR A 365      17.308  56.994 112.233  1.00 62.72           C
ATOM   2690  CZ  TYR A 365      17.725  58.307 112.047  1.00 69.04           C
ATOM   2691  OH  TYR A 365      17.618  59.225 113.080  1.00 60.28           O
ATOM   2692  N   THR A 366      20.887  54.945 110.606  1.00 54.01           N
ATOM   2693  CA  THR A 366      21.532  54.286 111.729  1.00 50.62           C
ATOM   2694  C   THR A 366      21.223  55.015 113.036  1.00 51.78           C
ATOM   2695  O   THR A 366      21.341  56.236 113.105  1.00 61.83           O
ATOM   2696  CB  THR A 366      23.050  54.296 111.539  1.00 47.56           C
ATOM   2697  OG1 THR A 366      23.489  55.645 111.339  1.00 54.98           O
ATOM   2698  CG2 THR A 366      23.442  53.480 110.331  1.00 37.27           C
ATOM   2699  N   ILE A 367      20.828  54.275 114.070  1.00 44.35           N
ATOM   2700  CA  ILE A 367      20.538  54.882 115.377  1.00 43.01           C
ATOM   2701  C   ILE A 367      21.113  54.118 116.562  1.00 44.48           C
ATOM   2702  O   ILE A 367      21.527  52.956 116.437  1.00 51.46           O
ATOM   2703  CB  ILE A 367      19.031  55.029 115.657  1.00 46.14           C
ATOM   2704  CG1 ILE A 367      18.284  53.779 115.204  1.00 46.40           C
ATOM   2705  CG2 ILE A 367      18.515  56.286 115.022  1.00 55.17           C
ATOM   2706  CD1 ILE A 367      18.671  52.535 115.960  1.00 50.08           C
ATOM   2707  N   ALA A 368      21.120  54.780 117.716  1.00 46.92           N
ATOM   2708  CA  ALA A 368      21.628  54.182 118.937  1.00 53.37           C
ATOM   2709  C   ALA A 368      20.604  53.228 119.552  1.00 52.95           C
ATOM   2710  O   ALA A 368      19.672  53.648 120.233  1.00 55.58           O
ATOM   2711  CB  ALA A 368      21.999  55.279 119.932  1.00 64.28           C
ATOM   2712  N   VAL A 369      20.790  51.943 119.283  1.00 46.01           N
ATOM   2713  CA  VAL A 369      19.939  50.891 119.813  1.00 36.78           C
ATOM   2714  C   VAL A 369      19.413  51.278 121.187  1.00 31.16           C
ATOM   2715  O   VAL A 369      18.230  51.110 121.502  1.00 23.65           O
ATOM   2716  CB  VAL A 369      20.748  49.596 119.955  1.00 46.22           C
ATOM   2717  CG1 VAL A 369      19.984  48.571 120.738  1.00 49.54           C
ATOM   2718  CG2 VAL A 369      21.109  49.066 118.585  1.00 57.99           C
ATOM   2719  N   ALA A 370      20.312  51.809 122.005  1.00 37.15           N
ATOM   2720  CA  ALA A 370      19.975  52.231 123.356  1.00 46.82           C
ATOM   2721  C   ALA A 370      18.860  53.269 123.383  1.00 49.03           C
ATOM   2722  O   ALA A 370      17.741  52.972 123.794  1.00 54.27           O
ATOM   2723  CB  ALA A 370      21.219  52.785 124.044  1.00 53.44           C
ATOM   2724  N   SER A 371      19.171  54.481 122.932  1.00 46.02           N
ATOM   2725  CA  SER A 371      18.196  55.563 122.930  1.00 49.13           C
ATOM   2726  C   SER A 371      17.016  55.266 122.018  1.00 46.74           C
ATOM   2727  O   SER A 371      16.569  56.136 121.285  1.00 51.75           O
ATOM   2728  CB  SER A 371      18.861  56.882 122.515  1.00 49.25           C
ATOM   2729  OG  SER A 371      19.222  56.878 121.148  1.00 46.67           O
ATOM   2730  N   LEU A 372      16.511  54.038 122.072  1.00 43.25           N
ATOM   2731  CA  LEU A 372      15.377  53.651 121.242  1.00 39.52           C
ATOM   2732  C   LEU A 372      14.135  53.415 122.092  1.00 41.63           C
ATOM   2733  O   LEU A 372      13.319  54.321 122.285  1.00 43.63           O
ATOM   2734  CB  LEU A 372      15.698  52.382 120.440  1.00 38.36           C
ATOM   2735  CG  LEU A 372      14.636  51.986 119.403  1.00 39.85           C
ATOM   2736  CD1 LEU A 372      14.260  53.182 118.536  1.00 35.69           C
ATOM   2737  CD2 LEU A 372      15.169  50.868 118.528  1.00 33.08           C
ATOM   2738  N   GLY A 373      13.995  52.190 122.596  1.00 41.36           N
ATOM   2739  CA  GLY A 373      12.847  51.847 123.423  1.00 42.44           C
ATOM   2740  C   GLY A 373      12.892  52.616 124.718  1.00 43.08           C
ATOM   2741  O   GLY A 373      12.973  52.027 125.792  1.00 41.04           O
ATOM   2742  N   LYS A 374      12.854  53.940 124.601  1.00 42.62           N
ATOM   2743  CA  LYS A 374      12.905  54.836 125.745  1.00 40.40           C
ATOM   2744  C   LYS A 374      14.066  54.461 126.642  1.00 39.72           C
ATOM   2745  O   LYS A 374      14.093  54.833 127.808  1.00 35.72           O
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ATOM   2746  CB  LYS A 374      11.596  54.773 126.528  1.00 43.36           C
ATOM   2747  CG  LYS A 374      10.897  56.105 126.618  1.00 55.37           C
ATOM   2748  CD  LYS A 374       9.446  55.945 127.032  1.00 70.29           C
ATOM   2749  CE  LYS A 374       8.697  57.271 126.997  1.00 76.90           C
ATOM   2750  NZ  LYS A 374       8.656  57.862 125.628  1.00 85.28           N
ATOM   2751  N   GLY A 375      15.026  53.724 126.085  1.00 46.09           N
ATOM   2752  CA  GLY A 375      16.187  53.298 126.843  1.00 45.98           C
ATOM   2753  C   GLY A 375      16.051  51.895 127.397  1.00 44.25           C
ATOM   2754  O   GLY A 375      17.045  51.196 127.567  1.00 42.54           O
ATOM   2755  N   VAL A 376      14.815  51.484 127.670  1.00 44.63           N
ATOM   2756  CA  VAL A 376      14.521  50.157 128.213  1.00 48.90           C
ATOM   2757  C   VAL A 376      14.846  49.013 127.261  1.00 51.39           C
ATOM   2758  O   VAL A 376      15.870  48.345 127.426  1.00 60.38           O
ATOM   2759  CB  VAL A 376      13.044  50.024 128.596  1.00 51.69           C
ATOM   2760  CG1 VAL A 376      12.742  48.595 129.011  1.00 56.12           C
ATOM   2761  CG2 VAL A 376      12.723  50.982 129.715  1.00 60.19           C
ATOM   2762  N   ALA A 377      13.965  48.771 126.289  1.00 48.99           N
ATOM   2763  CA  ALA A 377      14.176  47.703 125.322  1.00 50.51           C
ATOM   2764  C   ALA A 377      15.583  47.844 124.777  1.00 50.00           C
ATOM   2765  O   ALA A 377      15.931  48.867 124.181  1.00 43.03           O
ATOM   2766  CB  ALA A 377      13.170  47.800 124.202  1.00 55.85           C
ATOM   2767  N   CYS A 378      16.381  46.803 125.012  1.00 54.41           N
ATOM   2768  CA  CYS A 378      17.788  46.722 124.606  1.00 63.17           C
ATOM   2769  C   CYS A 378      18.736  46.782 125.791  1.00 64.43           C
ATOM   2770  O   CYS A 378      19.948  46.654 125.618  1.00 68.38           O
ATOM   2771  CB  CYS A 378      18.160  47.836 123.647  1.00 63.34           C
ATOM   2772  SG  CYS A 378      17.553  47.510 121.960  1.00 65.15           S
ATOM   2773  N   ASN A 379      18.193  46.995 126.991  1.00 61.33           N
ATOM   2774  CA  ASN A 379      19.024  47.033 128.192  1.00 63.54           C
ATOM   2775  C   ASN A 379      18.918  45.680 128.858  1.00 65.33           C
ATOM   2776  O   ASN A 379      17.886  45.344 129.434  1.00 62.68           O
ATOM   2777  CB  ASN A 379      18.571  48.108 129.172  1.00 71.26           C
ATOM   2778  CG  ASN A 379      19.666  48.475 130.157  1.00 81.14           C
ATOM   2779  OD1 ASN A 379      20.752  48.878 129.749  1.00 80.80           O
ATOM   2780  ND2 ASN A 379      19.393  48.332 131.453  1.00 90.99           N
ATOM   2781  N   PRO A 380      19.978  44.870 128.752  1.00 65.49           N
ATOM   2782  CA  PRO A 380      21.210  45.206 128.042  1.00 68.72           C
ATOM   2783  C   PRO A 380      21.125  44.561 126.655  1.00 71.25           C
ATOM   2784  O   PRO A 380      21.714  45.050 125.680  1.00 74.26           O
ATOM   2785  CB  PRO A 380      22.266  44.567 128.920  1.00 63.37           C
ATOM   2786  CG  PRO A 380      21.606  43.245 129.236  1.00 58.13           C
ATOM   2787  CD  PRO A 380      20.133  43.592 129.464  1.00 65.64           C
ATOM   2788  N   ALA A 381      20.381  43.455 126.590  1.00 69.39           N
ATOM   2789  CA  ALA A 381      20.201  42.735 125.348  1.00 66.00           C
ATOM   2790  C   ALA A 381      18.875  42.977 124.656  1.00 59.33           C
ATOM   2791  O   ALA A 381      17.837  43.217 125.292  1.00 53.52           O
ATOM   2792  CB  ALA A 381      20.417  41.248 125.572  1.00 75.68           C
ATOM   2793  N   CYS A 382      18.952  42.874 123.331  1.00 57.68           N
ATOM   2794  CA  CYS A 382      17.845  43.097 122.410  1.00 60.59           C
ATOM   2795  C   CYS A 382      17.858  42.066 121.272  1.00 61.79           C
ATOM   2796  O   CYS A 382      18.923  41.764 120.747  1.00 58.23           O
ATOM   2797  CB  CYS A 382      18.022  44.483 121.775  1.00 61.16           C
ATOM   2798  SG  CYS A 382      16.683  45.673 122.102  1.00 64.69           S
ATOM   2799  N   PHE A 383      16.704  41.515 120.896  1.00 62.44           N
ATOM   2800  CA  PHE A 383      16.664  40.620 119.745  1.00 65.46           C
ATOM   2801  C   PHE A 383      15.710  41.246 118.740  1.00 63.82           C
ATOM   2802  O   PHE A 383      14.504  41.287 118.950  1.00 61.15           O
ATOM   2803  CB  PHE A 383      16.210  39.206 120.105  1.00 68.56           C
ATOM   2804  CG  PHE A 383      16.467  38.203 119.002  1.00 76.53           C
ATOM   2805  CD1 PHE A 383      17.697  38.185 118.339  1.00 74.30           C
ATOM   2806  CD2 PHE A 383      15.493  37.281 118.625  1.00 85.67           C
ATOM   2807  CE1 PHE A 383      17.948  37.277 117.322  1.00 78.20           C
ATOM   2808  CE2 PHE A 383      15.741  36.362 117.600  1.00 88.13           C
ATOM   2809  CZ  PHE A 383      16.967  36.361 116.956  1.00 85.05           C
ATOM   2810  N   ILE A 384      16.270  41.731 117.641  1.00 61.06           N
ATOM   2811  CA  ILE A 384      15.488  42.396 116.613  1.00 55.74           C
ATOM   2812  C   ILE A 384      15.298  41.549 115.371  1.00 49.69           C
ATOM   2813  O   ILE A 384      16.260  41.088 114.751  1.00 52.06           O
ATOM   2814  CB  ILE A 384      16.169  43.677 116.179  1.00 60.45           C
ATOM   2815  CG1 ILE A 384      16.669  44.418 117.408  1.00 57.21           C
ATOM   2816  CG2 ILE A 384      15.218  44.509 115.343  1.00 59.27           C
ATOM   2817  CD1 ILE A 384      17.616  45.539 117.089  1.00 53.54           C
ATOM   2818  N   THR A 385      14.054  41.339 114.993  1.00 42.27           N
ATOM   2819  CA  THR A 385      13.802  40.546 113.809  1.00 45.98           C
ATOM   2820  C   THR A 385      13.050  41.451 112.841  1.00 38.79           C
ATOM   2821  O   THR A 385      11.914  41.861 113.113  1.00 41.54           O
ATOM   2822  CB  THR A 385      12.955  39.324 114.165  1.00 48.95           C
ATOM   2823  OG1 THR A 385      11.600  39.731 114.386  1.00 60.41           O
ATOM   2824  CG2 THR A 385      13.475  38.679 115.460  1.00 52.69           C
ATOM   2825  N   GLN A 386      13.693  41.808 111.731  1.00 34.79           N
ATOM   2826  CA  GLN A 386      13.023  42.677 110.781  1.00 35.28           C
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ATOM   2827  C   GLN A 386      11.727  41.981 110.476  1.00 39.22           C
ATOM   2828  O   GLN A 386      11.722  40.810 110.138  1.00 40.71           O
ATOM   2829  CB  GLN A 386      13.821  42.866 109.499  1.00 34.63           C
ATOM   2830  CG  GLN A 386      13.158  43.880 108.566  1.00 34.28           C
ATOM   2831  CD  GLN A 386      14.026  44.284 107.386  1.00 46.71           C
ATOM   2832  OE1 GLN A 386      13.732  43.941 106.249  1.00 48.69           O
ATOM   2833  NE2 GLN A 386      15.093  45.029 107.653  1.00 49.83           N
ATOM   2834  N   LEU A 387      10.616  42.682 110.641  1.00 43.59           N
ATOM   2835  CA  LEU A 387       9.322  42.060 110.402  1.00 39.83           C
ATOM   2836  C   LEU A 387       8.754  42.574 109.107  1.00 38.85           C
ATOM   2837  O   LEU A 387       7.693  42.126 108.675  1.00 34.66           O
ATOM   2838  CB  LEU A 387       8.361  42.375 111.552  1.00 33.47           C
ATOM   2839  CG  LEU A 387       7.307  41.314 111.857  1.00 41.41           C
ATOM   2840  CD1 LEU A 387       7.998  39.995 112.168  1.00 43.33           C
ATOM   2841  CD2 LEU A 387       6.451  41.754 113.042  1.00 41.38           C
ATOM   2842  N   LEU A 388       9.478  43.509 108.492  1.00 40.99           N
ATOM   2843  CA  LEU A 388       9.072  44.136 107.232  1.00 35.75           C
ATOM   2844  C   LEU A 388      10.209  45.000 106.694  1.00 35.19           C
ATOM   2845  O   LEU A 388      10.972  45.589 107.447  1.00 36.99           O
ATOM   2846  CB  LEU A 388       7.828  44.988 107.452  1.00 33.28           C
ATOM   2847  CG  LEU A 388       6.511  44.667 106.742  1.00 25.74           C
ATOM   2848  CD1 LEU A 388       6.390  43.189 106.470  1.00 38.31           C
ATOM   2849  CD2 LEU A 388       5.361  45.132 107.613  1.00  8.19           C
ATOM   2850  N   PRO A 389      10.282  45.150 105.374  1.00 28.44           N
ATOM   2851  CA  PRO A 389       9.391  44.522 104.403  1.00 30.70           C
ATOM   2852  C   PRO A 389       9.762  43.081 104.051  1.00 44.42           C
ATOM   2853  O   PRO A 389       9.282  42.550 103.049  1.00 50.46           O
ATOM   2854  CB  PRO A 389       9.529  45.449 103.206  1.00 26.67           C
ATOM   2855  CG  PRO A 389      11.014  45.718 103.228  1.00 16.13           C
ATOM   2856  CD  PRO A 389      11.281  45.990 104.695  1.00 24.47           C
ATOM   2857  N   VAL A 390      10.583  42.428 104.876  1.00 47.57           N
ATOM   2858  CA  VAL A 390      11.014  41.060 104.559  1.00 49.10           C
ATOM   2859  C   VAL A 390      11.239  40.095 105.724  1.00 51.10           C
ATOM   2860  O   VAL A 390      11.924  39.078 105.595  1.00 56.56           O
ATOM   2861  CB  VAL A 390      12.295  41.094 103.725  1.00 50.36           C
ATOM   2862  CG1 VAL A 390      12.050  41.882 102.446  1.00 54.46           C
ATOM   2863  CG2 VAL A 390      13.413  41.733 104.509  1.00 53.00           C
ATOM   2864  N   LYS A 391      10.669  40.409 106.869  1.00 53.92           N
ATOM   2865  CA  LYS A 391      10.813  39.520 108.008  1.00 60.85           C
ATOM   2866  C   LYS A 391      12.118  38.709 107.999  1.00 61.60           C
ATOM   2867  O   LYS A 391      12.127  37.511 107.688  1.00 60.62           O
ATOM   2868  CB  LYS A 391       9.621  38.557 108.077  1.00 70.30           C
ATOM   2869  CG  LYS A 391       9.581  37.752 109.393  1.00 73.84           C
ATOM   2870  CD  LYS A 391       8.354  36.840 109.609  1.00 82.47           C
ATOM   2871  CE  LYS A 391       8.162  36.436 111.105  1.00 78.17           C
ATOM   2872  NZ  LYS A 391       8.786  35.089 111.446  1.00 72.08           N
ATOM   2873  N   ARG A 392      13.211  39.377 108.350  1.00 65.79           N
ATOM   2874  CA  ARG A 392      14.525  38.755 108.408  1.00 66.82           C
ATOM   2875  C   ARG A 392      14.923  38.682 109.880  1.00 71.20           C
ATOM   2876  O   ARG A 392      14.436  39.459 110.699  1.00 71.14           O
ATOM   2877  CB  ARG A 392      15.542  39.599 107.632  1.00 62.17           C
ATOM   2878  CG  ARG A 392      16.666  38.800 106.997  1.00 67.14           C
ATOM   2879  CD  ARG A 392      17.945  39.615 106.871  1.00 73.94           C
ATOM   2880  NE  ARG A 392      17.705  40.942 106.318  1.00 76.16           N
ATOM   2881  CZ  ARG A 392      17.244  41.171 105.095  1.00 78.98           C
ATOM   2882  NH1 ARG A 392      16.970  40.157 104.285  1.00 83.20           N
ATOM   2883  NH2 ARG A 392      17.056  42.416 104.678  1.00 79.61           N
ATOM   2884  N   LYS A 393      15.826  37.763 110.204  1.00 74.34           N
ATOM   2885  CA  LYS A 393      16.272  37.567 111.581  1.00 74.32           C
ATOM   2886  C   LYS A 393      17.596  38.236 111.894  1.00 71.12           C
ATOM   2887  O   LYS A 393      18.653  37.631 111.738  1.00 72.31           O
ATOM   2888  CB  LYS A 393      16.400  36.075 111.864  1.00 76.52           C
ATOM   2889  CG  LYS A 393      15.440  35.517 112.894  1.00 81.26           C
ATOM   2890  CD  LYS A 393      15.657  34.016 113.031  1.00 84.21           C
ATOM   2891  CE  LYS A 393      14.564  33.355 113.854  1.00 84.12           C
ATOM   2892  NZ  LYS A 393      14.722  31.869 113.887  1.00 82.65           N
ATOM   2893  N   LEU A 394      17.548  39.482 112.344  1.00 64.44           N
ATOM   2894  CA  LEU A 394      18.777  40.190 112.666  1.00 65.62           C
ATOM   2895  C   LEU A 394      19.271  39.597 113.969  1.00 71.87           C
ATOM   2896  O   LEU A 394      18.498  38.966 114.682  1.00 74.80           O
ATOM   2897  CB  LEU A 394      18.479  41.673 112.818  1.00 61.06           C
ATOM   2898  CG  LEU A 394      17.758  42.207 111.579  1.00 56.94           C
ATOM   2899  CD1 LEU A 394      17.339  43.640 111.798  1.00 57.94           C
ATOM   2900  CD2 LEU A 394      18.673  42.087 110.372  1.00 63.83           C
ATOM   2901  N   GLY A 395      20.548  39.782 114.286  1.00 76.02           N
ATOM   2902  CA  GLY A 395      21.085  39.223 115.522  1.00 73.17           C
ATOM   2903  C   GLY A 395      20.680  39.890 116.826  1.00 65.34           C
ATOM   2904  O   GLY A 395      19.613  40.494 116.925  1.00 57.67           O
ATOM   2905  N   PHE A 396      21.540  39.776 117.835  1.00 63.13           N
ATOM   2906  CA  PHE A 396      21.286  40.392 119.139  1.00 62.22           C
ATOM   2907  C   PHE A 396      21.911  41.780 119.160  1.00 62.91           C
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ATOM   2908  O   PHE A 396      22.905  42.023 118.480  1.00 68.68           O
ATOM   2909  CB  PHE A 396      21.903  39.557 120.259  1.00 61.44           C
ATOM   2910  CG  PHE A 396      21.194  38.263 120.515  1.00 57.15           C
ATOM   2911  CD1 PHE A 396      20.789  37.923 121.806  1.00 54.82           C
ATOM   2912  CD2 PHE A 396      20.915  37.388 119.472  1.00 59.67           C
ATOM   2913  CE1 PHE A 396      20.107  36.725 122.052  1.00 52.15           C
ATOM   2914  CE2 PHE A 396      20.237  36.190 119.701  1.00 61.55           C
ATOM   2915  CZ  PHE A 396      19.830  35.856 120.991  1.00 58.19           C
ATOM   2916  N   TYR A 397      21.338  42.689 119.942  1.00 56.31           N
ATOM   2917  CA  TYR A 397      21.862  44.049 120.035  1.00 51.12           C
ATOM   2918  C   TYR A 397      22.132  44.491 121.470  1.00 50.69           C
ATOM   2919  O   TYR A 397      21.259  44.430 122.331  1.00 51.70           O
ATOM   2920  CB  TYR A 397      20.903  45.036 119.355  1.00 51.25           C
ATOM   2921  CG  TYR A 397      20.898  44.941 117.840  1.00 47.50           C
ATOM   2922  CD1 TYR A 397      20.283  43.874 117.183  1.00 44.72           C
ATOM   2923  CD2 TYR A 397      21.560  45.891 117.067  1.00 49.23           C
ATOM   2924  CE1 TYR A 397      20.336  43.757 115.801  1.00 47.21           C
ATOM   2925  CE2 TYR A 397      21.620  45.782 115.686  1.00 47.77           C
ATOM   2926  CZ  TYR A 397      21.011  44.715 115.056  1.00 49.51           C
ATOM   2927  OH  TYR A 397      21.108  44.600 113.682  1.00 48.37           O
ATOM   2928  N   GLU A 398      23.362  44.923 121.719  1.00 48.51           N
ATOM   2929  CA  GLU A 398      23.760  45.391 123.037  1.00 51.18           C
ATOM   2930  C   GLU A 398      23.351  46.838 123.202  1.00 49.09           C
ATOM   2931  O   GLU A 398      23.194  47.559 122.216  1.00 45.06           O
ATOM   2932  CB  GLU A 398      25.272  45.290 123.220  1.00 57.94           C
ATOM   2933  CG  GLU A 398      25.725  44.056 123.957  1.00 71.18           C
ATOM   2934  CD  GLU A 398      25.354  42.786 123.238  1.00 77.99           C
ATOM   2935  OE1 GLU A 398      25.703  42.676 122.044  1.00 83.73           O
ATOM   2936  OE2 GLU A 398      24.727  41.899 123.865  1.00 76.41           O
ATOM   2937  N   TRP A 399      23.191  47.262 124.453  1.00 47.03           N
ATOM   2938  CA  TRP A 399      22.792  48.631 124.750  1.00 50.15           C
ATOM   2939  C   TRP A 399      23.728  49.619 124.043  1.00 54.33           C
ATOM   2940  O   TRP A 399      23.350  50.753 123.751  1.00 58.30           O
ATOM   2941  CB  TRP A 399      22.815  48.849 126.268  1.00 55.61           C
ATOM   2942  CG  TRP A 399      22.007  50.024 126.770  1.00 57.12           C
ATOM   2943  CD1 TRP A 399      20.647  50.184 126.701  1.00 54.16           C
ATOM   2944  CD2 TRP A 399      22.511  51.181 127.447  1.00 62.24           C
ATOM   2945  NE1 TRP A 399      20.277  51.367 127.296  1.00 56.16           N
ATOM   2946  CE2 TRP A 399      21.401  52.000 127.760  1.00 65.34           C
ATOM   2947  CE3 TRP A 399      23.794  51.606 127.818  1.00 62.19           C
ATOM   2948  CZ2 TRP A 399      21.536  53.223 128.427  1.00 76.06           C
ATOM   2949  CZ3 TRP A 399      23.929  52.823 128.481  1.00 69.98           C
ATOM   2950  CH2 TRP A 399      22.803  53.617 128.778  1.00 76.99           C
ATOM   2951  N   THR A 400      24.953  49.186 123.769  1.00 56.41           N
ATOM   2952  CA  THR A 400      25.902  50.058 123.085  1.00 56.34           C
ATOM   2953  C   THR A 400      25.811  49.815 121.583  1.00 59.91           C
ATOM   2954  O   THR A 400      26.226  50.657 120.791  1.00 64.35           O
ATOM   2955  CB  THR A 400      27.383  49.837 123.553  1.00 54.34           C
ATOM   2956  OG1 THR A 400      27.846  48.544 123.148  1.00 45.99           O
ATOM   2957  CG2 THR A 400      27.494  49.950 125.071  1.00 57.48           C
ATOM   2958  N   SER A 401      25.265  48.662 121.199  1.00 58.74           N
ATOM   2959  CA  SER A 401      25.121  48.327 119.789  1.00 52.36           C
ATOM   2960  C   SER A 401      24.381  49.451 119.082  1.00 46.82           C
ATOM   2961  O   SER A 401      23.467  50.057 119.639  1.00 56.74           O
ATOM   2962  CB  SER A 401      24.361  47.014 119.617  1.00 53.66           C
ATOM   2963  OG  SER A 401      25.156  45.930 120.048  1.00 66.24           O
ATOM   2964  N   ARG A 402      24.806  49.737 117.858  1.00 37.82           N
ATOM   2965  CA  ARG A 402      24.212  50.786 117.055  1.00 35.51           C
ATOM   2966  C   ARG A 402      23.541  50.093 115.868  1.00 33.40           C
ATOM   2967  O   ARG A 402      24.171  49.301 115.171  1.00 39.64           O
ATOM   2968  CB  ARG A 402      25.311  51.744 116.592  1.00 35.13           C
ATOM   2969  CG  ARG A 402      24.822  53.137 116.240  1.00 38.74           C
ATOM   2970  CD  ARG A 402      25.977  54.027 115.780  1.00 46.52           C
ATOM   2971  NE  ARG A 402      25.556  55.298 115.175  1.00 65.72           N
ATOM   2972  CZ  ARG A 402      24.891  56.272 115.802  1.00 76.44           C
ATOM   2973  NH1 ARG A 402      24.542  56.149 117.081  1.00 80.92           N
ATOM   2974  NH2 ARG A 402      24.590  57.389 115.146  1.00 72.87           N
ATOM   2975  N   LEU A 403      22.262  50.379 115.636  1.00 32.46           N
ATOM   2976  CA  LEU A 403      21.544  49.728 114.538  1.00 39.75           C
ATOM   2977  C   LEU A 403      21.524  50.458 113.194  1.00 47.84           C
ATOM   2978  O   LEU A 403      21.198  51.645 113.119  1.00 53.11           O
ATOM   2979  CB  LEU A 403      20.112  49.414 114.967  1.00 34.32           C
ATOM   2980  CG  LEU A 403      19.110  49.102 113.850  1.00 23.74           C
ATOM   2981  CD1 LEU A 403      19.665  48.111 112.814  1.00 34.79           C
ATOM   2982  CD2 LEU A 403      17.871  48.552 114.512  1.00 16.75           C
ATOM   2983  N   ARG A 404      21.856  49.734 112.126  1.00 51.96           N
ATOM   2984  CA  ARG A 404      21.877  50.330 110.801  1.00 61.16           C
ATOM   2985  C   ARG A 404      21.007  49.571 109.835  1.00 61.63           C
ATOM   2986  O   ARG A 404      20.941  48.345 109.865  1.00 62.38           O
ATOM   2987  CB  ARG A 404      23.299  50.360 110.262  1.00 77.33           C
ATOM   2988  CG  ARG A 404      23.395  50.669 108.777  1.00 93.31           C
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ATOM   2989  CD  ARG A 404      24.842  50.752 108.330  1.00104.56           C
ATOM   2990  NE  ARG A 404      24.958  51.122 106.924  1.00108.36           N
ATOM   2991  CZ  ARG A 404      26.087  51.518 106.347  1.00110.69           C
ATOM   2992  NH1 ARG A 404      27.207  51.596 107.054  1.00113.17           N
ATOM   2993  NH2 ARG A 404      26.092  51.853 105.065  1.00115.15           N
ATOM   2994  N   SER A 405      20.345  50.311 108.960  1.00 65.87           N
ATOM   2995  CA  SER A 405      19.487  49.692 107.965  1.00 64.24           C
ATOM   2996  C   SER A 405      19.162  50.670 106.840  1.00 59.61           C
ATOM   2997  O   SER A 405      19.135  51.885 107.051  1.00 58.40           O
ATOM   2998  CB  SER A 405      18.202  49.202 108.629  1.00 64.50           C
ATOM   2999  OG  SER A 405      17.527  48.275 107.799  1.00 70.73           O
ATOM   3000  N   HIS A 406      18.931  50.127 105.647  1.00 53.12           N
ATOM   3001  CA  HIS A 406      18.595  50.934 104.481  1.00 46.56           C
ATOM   3002  C   HIS A 406      17.068  50.925 104.277  1.00 35.83           C
ATOM   3003  O   HIS A 406      16.404  49.910 104.503  1.00 29.57           O
ATOM   3004  CB  HIS A 406      19.293  50.392 103.228  1.00 48.87           C
ATOM   3005  CG  HIS A 406      20.771  50.232 103.374  1.00 54.29           C
ATOM   3006  ND1 HIS A 406      21.673  50.862 102.543  1.00 45.66           N
ATOM   3007  CD2 HIS A 406      21.505  49.497 104.243  1.00 61.18           C
ATOM   3008  CE1 HIS A 406      22.899  50.521 102.894  1.00 56.81           C
ATOM   3009  NE2 HIS A 406      22.825  49.694 103.924  1.00 64.48           N
ATOM   3010  N   ILE A 407      16.517  52.055 103.843  1.00 33.33           N
ATOM   3011  CA  ILE A 407      15.079  52.185 103.648  1.00 27.22           C
ATOM   3012  C   ILE A 407      14.763  52.762 102.278  1.00 27.16           C
ATOM   3013  O   ILE A 407      15.310  53.800 101.900  1.00 32.16           O
ATOM   3014  CB  ILE A 407      14.498  53.124 104.715  1.00 23.67           C
ATOM   3015  CG1 ILE A 407      14.838  52.598 106.109  1.00 16.69           C
ATOM   3016  CG2 ILE A 407      12.999  53.262 104.531  1.00 29.79           C
ATOM   3017  CD1 ILE A 407      14.805  53.660 107.162  1.00 26.25           C
ATOM   3018  N   ASN A 408      13.864  52.105 101.545  1.00 26.02           N
ATOM   3019  CA  ASN A 408      13.477  52.564 100.198  1.00 28.35           C
ATOM   3020  C   ASN A 408      12.636  53.842 100.237  1.00 25.53           C
ATOM   3021  O   ASN A 408      11.939  54.105 101.224  1.00 19.57           O
ATOM   3022  CB  ASN A 408      12.662  51.492  99.445  1.00 31.03           C
ATOM   3023  CG  ASN A 408      13.443  50.213  99.200  1.00 34.57           C
ATOM   3024  OD1 ASN A 408      14.671  50.232  99.080  1.00 53.90           O
ATOM   3025  ND2 ASN A 408      12.732  49.094  99.099  1.00 23.17           N
ATOM   3026  N   PRO A 409      12.695  54.655  99.161  1.00 25.66           N
ATOM   3027  CA  PRO A 409      11.926  55.903  99.075  1.00 25.52           C
ATOM   3028  C   PRO A 409      10.425  55.646  99.285  1.00 25.11           C
ATOM   3029  O   PRO A 409       9.847  54.751  98.667  1.00 19.70           O
ATOM   3030  CB  PRO A 409      12.236  56.402  97.661  1.00 26.57           C
ATOM   3031  CG  PRO A 409      13.641  55.958  97.458  1.00 30.00           C
ATOM   3032  CD  PRO A 409      13.613  54.536  98.012  1.00 27.07           C
ATOM   3033  N   THR A 410       9.811  56.438 100.160  1.00 25.25           N
ATOM   3034  CA  THR A 410       8.389  56.323 100.490  1.00 21.37           C
ATOM   3035  C   THR A 410       8.057  54.967 101.118  1.00 24.99           C
ATOM   3036  O   THR A 410       6.888  54.650 101.346  1.00 19.45           O
ATOM   3037  CB  THR A 410       7.481  56.535  99.248  1.00 11.71           C
ATOM   3038  OG1 THR A 410       7.290  55.293  98.556  1.00  6.84           O
ATOM   3039  CG2 THR A 410       8.111  57.544  98.297  1.00 18.20           C
ATOM   3040  N   GLY A 411       9.094  54.176 101.394  1.00 28.42           N
ATOM   3041  CA  GLY A 411       8.908  52.870 102.000  1.00 34.59           C
ATOM   3042  C   GLY A 411       9.056  52.916 103.518  1.00 38.12           C
ATOM   3043  O   GLY A 411       9.206  53.994 104.109  1.00 30.75           O
ATOM   3044  N   THR A 412       9.017  51.744 104.153  1.00 35.64           N
ATOM   3045  CA  THR A 412       9.139  51.650 105.604  1.00 24.91           C
ATOM   3046  C   THR A 412       9.714  50.310 106.065  1.00 34.60           C
ATOM   3047  O   THR A 412       9.342  49.262 105.537  1.00 43.97           O
ATOM   3048  CB  THR A 412       7.769  51.824 106.262  1.00 17.00           C
ATOM   3049  OG1 THR A 412       7.159  53.015 105.761  1.00 12.89           O
ATOM   3050  CG2 THR A 412       7.904  51.916 107.786  1.00 20.31           C
ATOM   3051  N   VAL A 413      10.626  50.348 107.036  1.00 35.58           N
ATOM   3052  CA  VAL A 413      11.212  49.132 107.591  1.00 35.35           C
ATOM   3053  C   VAL A 413      10.678  48.975 109.005  1.00 37.44           C
ATOM   3054  O   VAL A 413      10.978  49.774 109.889  1.00 40.54           O
ATOM   3055  CB  VAL A 413      12.738  49.194 107.672  1.00 31.35           C
ATOM   3056  CG1 VAL A 413      13.255  48.030 108.500  1.00 32.15           C
ATOM   3057  CG2 VAL A 413      13.331  49.134 106.285  1.00 38.55           C
ATOM   3058  N   LEU A 414       9.876  47.940 109.205  1.00 34.54           N
ATOM   3059  CA  LEU A 414       9.262  47.657 110.494  1.00 27.00           C
ATOM   3060  C   LEU A 414      10.077  46.645 111.273  1.00 25.79           C
ATOM   3061  O   LEU A 414      10.373  45.560 110.761  1.00 25.63           O
ATOM   3062  CB  LEU A 414       7.865  47.099 110.270  1.00 25.75           C
ATOM   3063  CG  LEU A 414       7.129  46.677 111.528  1.00 26.71           C
ATOM   3064  CD1 LEU A 414       7.074  47.856 112.492  1.00 25.98           C
ATOM   3065  CD2 LEU A 414       5.732  46.196 111.139  1.00 23.70           C
ATOM   3066  N   LEU A 415      10.418  46.989 112.511  1.00 20.72           N
ATOM   3067  CA  LEU A 415      11.212  46.105 113.349  1.00 25.29           C
ATOM   3068  C   LEU A 415      10.501  45.751 114.611  1.00 35.11           C
ATOM   3069  O   LEU A 415       9.619  46.473 115.058  1.00 40.83           O
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ATOM	3070	CB	LEU	A	415	12.512	46.774	113.739	1.00	26.14	C
ATOM	3071	CG	LEU	A	415	13.445	47.042	112.580	1.00	35.73	C
ATOM	3072	CD1	LEU	A	415	14.630	47.860	113.057	1.00	32.15	C
ATOM	3073	CD2	LEU	A	415	13.881	45.711	112.002	1.00	31.51	C
ATOM	3074	N	GLN	A	416	10.909	44.636	115.199	1.00	45.21	N
ATOM	3075	CA	GLN	A	416	10.342	44.187	116.465	1.00	49.37	C
ATOM	3076	C	GLN	A	416	11.462	43.750	117.400	1.00	49.32	C
ATOM	3077	O	GLN	A	416	12.252	42.856	117.085	1.00	54.45	O
ATOM	3078	CB	GLN	A	416	9.384	43.035	116.262	1.00	53.69	C
ATOM	3079	CG	GLN	A	416	8.851	42.500	117.555	1.00	61.76	C
ATOM	3080	CD	GLN	A	416	7.948	41.319	117.342	1.00	70.07	C
ATOM	3081	OE1	GLN	A	416	6.852	41.463	116.827	1.00	69.41	O
ATOM	3082	NE2	GLN	A	416	8.412	40.138	117.716	1.00	71.96	N
ATOM	3083	N	LEU	A	417	11.530	44.405	118.551	1.00	44.33	N
ATOM	3084	CA	LEU	A	417	12.565	44.134	119.532	1.00	39.55	C
ATOM	3085	C	LEU	A	417	12.102	43.382	120.757	1.00	43.96	C
ATOM	3086	O	LEU	A	417	11.068	43.702	121.354	1.00	47.68	O
ATOM	3087	CB	LEU	A	417	13.193	45.435	120.005	1.00	28.58	C
ATOM	3088	CG	LEU	A	417	13.889	46.296	118.965	1.00	23.76	C
ATOM	3089	CD1	LEU	A	417	12.937	46.722	117.871	1.00	23.16	C
ATOM	3090	CD2	LEU	A	417	14.412	47.510	119.678	1.00	37.98	C
ATOM	3091	N	GLU	A	418	12.930	42.406	121.129	1.00	50.78	N
ATOM	3092	CA	GLU	A	418	12.740	41.544	122.294	1.00	56.06	C
ATOM	3093	C	GLU	A	418	13.886	41.795	123.273	1.00	52.73	C
ATOM	3094	O	GLU	A	418	15.048	41.847	122.883	1.00	52.36	O
ATOM	3095	CB	GLU	A	418	12.778	40.072	121.878	1.00	73.81	C
ATOM	3096	CG	GLU	A	418	11.697	39.660	120.905	1.00	81.37	C
ATOM	3097	CD	GLU	A	418	10.318	39.968	121.434	1.00	88.26	C
ATOM	3098	OE1	GLU	A	418	10.067	39.684	122.624	1.00	88.90	O
ATOM	3099	OE2	GLU	A	418	9.485	40.487	120.664	1.00	92.72	O
ATOM	3100	N	ASN	A	419	13.561	41.929	124.547	1.00	51.08	N
ATOM	3101	CA	ASN	A	419	14.575	42.170	125.563	1.00	62.26	C
ATOM	3102	C	ASN	A	419	15.010	40.832	126.204	1.00	72.70	C
ATOM	3103	O	ASN	A	419	14.160	40.013	126.549	1.00	77.62	O
ATOM	3104	CB	ASN	A	419	13.983	43.109	126.607	1.00	61.20	C
ATOM	3105	CG	ASN	A	419	15.024	43.718	127.495	1.00	66.62	C
ATOM	3106	OD1	ASN	A	419	15.714	43.022	128.242	1.00	68.87	O
ATOM	3107	ND2	ASN	A	419	15.149	45.036	127.426	1.00	72.89	N
ATOM	3108	N	THR	A	420	16.317	40.608	126.367	1.00	81.68	N
ATOM	3109	CA	THR	A	420	16.818	39.351	126.947	1.00	90.74	C
ATOM	3110	C	THR	A	420	16.281	38.983	128.332	1.00	104.05	C
ATOM	3111	O	THR	A	420	16.454	37.848	128.782	1.00	110.21	O
ATOM	3112	CB	THR	A	420	18.366	39.333	126.998	1.00	81.03	C
ATOM	3113	OG1	THR	A	420	18.869	39.041	125.693	1.00	75.62	O
ATOM	3114	CG2	THR	A	420	18.886	38.272	127.975	1.00	77.69	C
ATOM	3115	N	MET	A	421	15.627	39.931	128.998	1.00	113.95	N
ATOM	3116	CA	MET	A	421	15.065	39.705	130.331	1.00	120.80	C
ATOM	3117	C	MET	A	421	15.982	38.870	131.225	1.00	123.07	C
ATOM	3118	O	MET	A	421	16.695	39.399	132.082	1.00	123.93	O
ATOM	3119	CB	MET	A	421	13.688	39.024	130.230	1.00	125.37	C
ATOM	3120	CG	MET	A	421	13.707	37.568	129.761	1.00	132.66	C
ATOM	3121	SD	MET	A	421	13.245	37.319	128.032	1.00	139.40	S
ATOM	3122	CE	MET	A	421	11.455	37.308	128.169	1.00	140.66	C
TER	3123		MET	A	421						

CHAIN B

		Atom Type	Resid	#	X	Y	Z	OCC	B	
ATOM	3124	N	LEU B	32	18.182	70.054	66.135	1.00	79.74	N
ATOM	3125	CA	LEU B	32	19.509	70.198	65.474	1.00	75.16	C
ATOM	3126	C	LEU B	32	19.643	69.164	64.364	1.00	74.82	C
ATOM	3127	O	LEU B	32	19.674	67.959	64.622	1.00	74.40	O
ATOM	3128	CB	LEU B	32	20.631	70.015	66.499	1.00	69.65	C
ATOM	3129	CG	LEU B	32	22.052	70.032	65.945	1.00	63.79	C
ATOM	3130	CD1	LEU B	32	22.277	71.300	65.142	1.00	69.05	C
ATOM	3131	CD2	LEU B	32	23.037	69.926	67.088	1.00	60.38	C
ATOM	3132	N	ASP B	33	19.718	69.637	63.127	1.00	75.12	N
ATOM	3133	CA	ASP B	33	19.829	68.743	61.980	1.00	77.12	C
ATOM	3134	C	ASP B	33	21.250	68.235	61.775	1.00	73.83	C
ATOM	3135	O	ASP B	33	21.982	68.735	60.929	1.00	79.11	O
ATOM	3136	CB	ASP B	33	19.331	69.453	60.719	1.00	84.26	C
ATOM	3137	CG	ASP B	33	19.411	68.578	59.477	1.00	92.75	C
ATOM	3138	OD1	ASP B	33	20.533	68.328	58.990	1.00	96.10	O
ATOM	3139	OD2	ASP B	33	18.348	68.142	58.982	1.00	101.06	O
ATOM	3140	N	ASN B	34	21.631	67.237	62.565	1.00	68.75	N
ATOM	3141	CA	ASN B	34	22.955	66.629	62.490	1.00	61.95	C
ATOM	3142	C	ASN B	34	22.745	65.183	62.084	1.00	61.51	C
ATOM	3143	O	ASN B	34	23.643	64.354	62.194	1.00	62.64	O
ATOM	3144	CB	ASN B	34	23.625	66.670	63.860	1.00	60.52	C
ATOM	3145	CG	ASN B	34	22.702	66.183	64.965	1.00	60.45	C

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ATOM   3146  OD1 ASN B  34      21.873  65.300  64.744  1.00 75.84           O
ATOM   3147  ND2 ASN B  34      22.846  66.751  66.159  1.00 52.80           N
ATOM   3148  N   GLY B  35      21.536  64.889  61.624  1.00 59.99           N
ATOM   3149  CA  GLY B  35      21.211  63.539  61.222  1.00 56.70           C
ATOM   3150  C   GLY B  35      21.134  62.635  62.432  1.00 51.54           C
ATOM   3151  O   GLY B  35      21.241  61.417  62.310  1.00 50.80           O
ATOM   3152  N   LEU B  36      20.965  63.236  63.606  1.00 50.80           N
ATOM   3153  CA  LEU B  36      20.868  62.473  64.841  1.00 53.80           C
ATOM   3154  C   LEU B  36      19.532  62.692  65.510  1.00 55.66           C
ATOM   3155  O   LEU B  36      18.915  63.752  65.374  1.00 54.78           O
ATOM   3156  CB  LEU B  36      21.981  62.851  65.817  1.00 55.51           C
ATOM   3157  CG  LEU B  36      23.391  62.428  65.431  1.00 61.24           C
ATOM   3158  CD1 LEU B  36      24.307  62.620  66.627  1.00 69.17           C
ATOM   3159  CD2 LEU B  36      23.388  60.968  64.995  1.00 64.69           C
ATOM   3160  N   ALA B  37      19.094  61.682  66.249  1.00 55.44           N
ATOM   3161  CA  ALA B  37      17.823  61.773  66.924  1.00 56.47           C
ATOM   3162  C   ALA B  37      16.770  62.027  65.857  1.00 55.07           C
ATOM   3163  O   ALA B  37      16.046  63.024  65.910  1.00 61.48           O
ATOM   3164  CB  ALA B  37      17.841  62.910  67.929  1.00 48.50           C
ATOM   3165  N   ARG B  38      16.715  61.141  64.864  1.00 52.66           N
ATOM   3166  CA  ARG B  38      15.710  61.260  63.818  1.00 54.70           C
ATOM   3167  C   ARG B  38      14.532  60.514  64.402  1.00 53.28           C
ATOM   3168  O   ARG B  38      13.529  60.268  63.745  1.00 56.89           O
ATOM   3169  CB  ARG B  38      16.150  60.591  62.511  1.00 60.48           C
ATOM   3170  CG  ARG B  38      17.485  61.061  61.940  1.00 67.93           C
ATOM   3171  CD  ARG B  38      17.698  62.565  62.071  1.00 73.20           C
ATOM   3172  NE  ARG B  38      16.750  63.366  61.302  1.00 75.02           N
ATOM   3173  CZ  ARG B  38      16.732  64.698  61.314  1.00 75.84           C
ATOM   3174  NH1 ARG B  38      17.607  65.368  62.054  1.00 71.97           N
ATOM   3175  NH2 ARG B  38      15.847  65.365  60.587  1.00 71.94           N
ATOM   3176  N   THR B  39      14.708  60.145  65.663  1.00 49.27           N
ATOM   3177  CA  THR B  39      13.718  59.444  66.473  1.00 48.97           C
ATOM   3178  C   THR B  39      14.065  59.752  67.930  1.00 45.13           C
ATOM   3179  O   THR B  39      15.234  59.923  68.281  1.00 41.30           O
ATOM   3180  CB  THR B  39      13.784  57.923  66.284  1.00 51.41           C
ATOM   3181  OG1 THR B  39      15.090  57.453  66.642  1.00 53.32           O
ATOM   3182  CG2 THR B  39      13.491  57.557  64.849  1.00 53.48           C
ATOM   3183  N   PRO B  40      13.052  59.838  68.797  1.00 43.40           N
ATOM   3184  CA  PRO B  40      13.339  60.129  70.203  1.00 44.54           C
ATOM   3185  C   PRO B  40      14.477  59.233  70.712  1.00 42.84           C
ATOM   3186  O   PRO B  40      14.403  58.011  70.602  1.00 41.51           O
ATOM   3187  CB  PRO B  40      12.008  59.833  70.884  1.00 43.15           C
ATOM   3188  CG  PRO B  40      10.994  60.182  69.811  1.00 45.82           C
ATOM   3189  CD  PRO B  40      11.614  59.597  68.575  1.00 43.19           C
ATOM   3190  N   THR B  41      15.532  59.845  71.246  1.00 39.69           N
ATOM   3191  CA  THR B  41      16.688  59.104  71.762  1.00 34.79           C
ATOM   3192  C   THR B  41      16.260  58.125  72.854  1.00 34.75           C
ATOM   3193  O   THR B  41      15.420  58.464  73.688  1.00 39.58           O
ATOM   3194  CB  THR B  41      17.722  60.046  72.405  1.00 29.69           C
ATOM   3195  OG1 THR B  41      17.911  61.195  71.577  1.00 41.03           O
ATOM   3196  CG2 THR B  41      19.049  59.326  72.584  1.00 27.40           C
ATOM   3197  N   MET B  42      16.844  56.926  72.866  1.00 31.56           N
ATOM   3198  CA  MET B  42      16.520  55.931  73.890  1.00 30.99           C
ATOM   3199  C   MET B  42      17.766  55.515  74.667  1.00 25.79           C
ATOM   3200  O   MET B  42      18.777  55.121  74.066  1.00 22.58           O
ATOM   3201  CB  MET B  42      15.900  54.697  73.256  1.00 31.64           C
ATOM   3202  CG  MET B  42      14.675  54.994  72.465  1.00 30.50           C
ATOM   3203  SD  MET B  42      13.927  53.466  71.905  1.00 35.34           S
ATOM   3204  CE  MET B  42      13.193  52.944  73.482  1.00 33.78           C
ATOM   3205  N   GLY B  43      17.683  55.585  75.997  1.00 17.55           N
ATOM   3206  CA  GLY B  43      18.814  55.216  76.821  1.00 10.11           C
ATOM   3207  C   GLY B  43      18.537  55.205  78.314  1.00 20.21           C
ATOM   3208  O   GLY B  43      17.388  55.113  78.740  1.00 26.95           O
ATOM   3209  N   TRP B  44      19.607  55.307  79.105  1.00 24.35           N
ATOM   3210  CA  TRP B  44      19.535  55.295  80.562  1.00 21.41           C
ATOM   3211  C   TRP B  44      20.361  56.447  81.108  1.00 19.25           C
ATOM   3212  O   TRP B  44      21.407  56.785  80.560  1.00 17.63           O
ATOM   3213  CB  TRP B  44      20.093  53.977  81.089  1.00 16.55           C
ATOM   3214  CG  TRP B  44      19.981  53.771  82.580  1.00 14.71           C
ATOM   3215  CD1 TRP B  44      18.878  53.325  83.271  1.00 24.41           C
ATOM   3216  CD2 TRP B  44      21.010  53.979  83.564  1.00 12.56           C
ATOM   3217  NE1 TRP B  44      19.159  53.240  84.622  1.00 21.86           N
ATOM   3218  CE2 TRP B  44      20.456  53.637  84.831  1.00 19.49           C
ATOM   3219  CE3 TRP B  44      22.340  54.421  83.501  1.00  3.31           C
ATOM   3220  CZ2 TRP B  44      21.192  53.729  86.028  1.00 18.23           C
ATOM   3221  CZ3 TRP B  44      23.069  54.508  84.685  1.00 18.81           C
ATOM   3222  CH2 TRP B  44      22.491  54.164  85.934  1.00 21.72           C
ATOM   3223  N   LEU B  45      19.891  57.041  82.193  1.00 14.32           N
ATOM   3224  CA  LEU B  45      20.585  58.151  82.800  1.00 12.02           C
ATOM   3225  C   LEU B  45      20.518  57.949  84.298  1.00 11.86           C
ATOM   3226  O   LEU B  45      19.446  57.871  84.893  1.00  9.20           O
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ATOM   3227  CB  LEU B  45      19.912  59.452  82.403  1.00 18.50           C
ATOM   3228  CG  LEU B  45      20.723  60.735  82.556  1.00 20.48           C
ATOM   3229  CD1 LEU B  45      19.788  61.910  82.353  1.00 38.29           C
ATOM   3230  CD2 LEU B  45      21.364  60.820  83.931  1.00 26.67           C
ATOM   3231  N   HIS B  46      21.688  57.888  84.905  1.00 15.42           N
ATOM   3232  CA  HIS B  46      21.811  57.646  86.324  1.00 17.99           C
ATOM   3233  C   HIS B  46      21.165  58.639  87.262  1.00 20.83           C
ATOM   3234  O   HIS B  46      20.859  58.283  88.400  1.00 18.34           O
ATOM   3235  CB  HIS B  46      23.291  57.539  86.687  1.00 20.83           C
ATOM   3236  CG  HIS B  46      23.894  58.830  87.147  1.00 34.82           C
ATOM   3237  ND1 HIS B  46      23.752  59.300  88.435  1.00 42.63           N
ATOM   3238  CD2 HIS B  46      24.626  59.759  86.488  1.00 36.96           C
ATOM   3239  CE1 HIS B  46      24.372  60.461  88.550  1.00 44.35           C
ATOM   3240  NE2 HIS B  46      24.911  60.763  87.383  1.00 43.02           N
ATOM   3241  N   TRP B  47      20.925  59.867  86.822  1.00 19.71           N
ATOM   3242  CA  TRP B  47      20.398  60.848  87.770  1.00 28.76           C
ATOM   3243  C   TRP B  47      19.337  60.464  88.817  1.00 27.27           C
ATOM   3244  O   TRP B  47      19.682  60.183  89.960  1.00 21.13           O
ATOM   3245  CB  TRP B  47      19.935  62.126  87.074  1.00 34.47           C
ATOM   3246  CG  TRP B  47      19.839  63.234  88.093  1.00 44.39           C
ATOM   3247  CD1 TRP B  47      18.726  63.955  88.437  1.00 50.83           C
ATOM   3248  CD2 TRP B  47      20.883  63.679  88.960  1.00 40.85           C
ATOM   3249  NE1 TRP B  47      19.017  64.813  89.469  1.00 53.15           N
ATOM   3250  CE2 TRP B  47      20.334  64.659  89.812  1.00 43.61           C
ATOM   3251  CE3 TRP B  47      22.229  63.334  89.109  1.00 37.21           C
ATOM   3252  CZ2 TRP B  47      21.089  65.307  90.790  1.00 42.53           C
ATOM   3253  CZ3 TRP B  47      22.977  63.975  90.077  1.00 43.26           C
ATOM   3254  CH2 TRP B  47      22.404  64.948  90.910  1.00 43.64           C
ATOM   3255  N   GLU B  48      18.059  60.456  88.443  1.00 26.18           N
ATOM   3256  CA  GLU B  48      16.992  60.161  89.403  1.00 26.94           C
ATOM   3257  C   GLU B  48      17.236  58.982  90.336  1.00 26.40           C
ATOM   3258  O   GLU B  48      16.961  59.074  91.540  1.00 32.83           O
ATOM   3259  CB  GLU B  48      15.644  59.960  88.688  1.00 23.59           C
ATOM   3260  CG  GLU B  48      14.398  60.028  89.619  1.00 21.37           C
ATOM   3261  CD  GLU B  48      14.277  58.855  90.596  1.00 30.24           C
ATOM   3262  OE1 GLU B  48      14.155  57.704  90.140  1.00 25.42           O
ATOM   3263  OE2 GLU B  48      14.293  59.078  91.825  1.00 31.90           O
ATOM   3264  N   ARG B  49      17.764  57.886  89.797  1.00 18.46           N
ATOM   3265  CA  ARG B  49      17.980  56.690  90.604  1.00 20.46           C
ATOM   3266  C   ARG B  49      19.190  56.682  91.510  1.00 16.99           C
ATOM   3267  O   ARG B  49      19.225  55.945  92.491  1.00  9.54           O
ATOM   3268  CB  ARG B  49      18.036  55.455  89.702  1.00 27.12           C
ATOM   3269  CG  ARG B  49      18.027  54.142  90.465  1.00 24.47           C
ATOM   3270  CD  ARG B  49      16.855  54.085  91.440  1.00 39.57           C
ATOM   3271  NE  ARG B  49      16.607  52.717  91.874  1.00 46.87           N
ATOM   3272  CZ  ARG B  49      17.402  52.033  92.687  1.00 47.11           C
ATOM   3273  NH1 ARG B  49      18.500  52.594  93.173  1.00 45.74           N
ATOM   3274  NH2 ARG B  49      17.112  50.774  92.983  1.00 51.18           N
ATOM   3275  N   PHE B  50      20.175  57.506  91.187  1.00 14.61           N
ATOM   3276  CA  PHE B  50      21.394  57.538  91.973  1.00 21.31           C
ATOM   3277  C   PHE B  50      21.879  58.925  92.369  1.00 31.87           C
ATOM   3278  O   PHE B  50      22.846  59.062  93.120  1.00 37.81           O
ATOM   3279  CB  PHE B  50      22.480  56.789  91.201  1.00 19.77           C
ATOM   3280  CG  PHE B  50      22.172  55.332  91.017  1.00 26.51           C
ATOM   3281  CD1 PHE B  50      22.492  54.405  92.004  1.00 34.38           C
ATOM   3282  CD2 PHE B  50      21.506  54.892  89.884  1.00 18.64           C
ATOM   3283  CE1 PHE B  50      22.144  53.061  91.857  1.00 39.33           C
ATOM   3284  CE2 PHE B  50      21.153  53.545  89.726  1.00 24.72           C
ATOM   3285  CZ  PHE B  50      21.472  52.630  90.710  1.00 30.82           C
ATOM   3286  N   MET B  51      21.205  59.950  91.864  1.00 43.78           N
ATOM   3287  CA  MET B  51      21.568  61.325  92.164  1.00 47.32           C
ATOM   3288  C   MET B  51      23.076  61.517  92.228  1.00 48.94           C
ATOM   3289  O   MET B  51      23.821  60.934  91.447  1.00 46.96           O
ATOM   3290  CB  MET B  51      20.959  61.738  93.488  1.00 43.64           C
ATOM   3291  CG  MET B  51      19.499  61.462  93.581  1.00 36.00           C
ATOM   3292  SD  MET B  51      18.929  62.237  95.051  1.00 43.28           S
ATOM   3293  CE  MET B  51      18.299  63.762  94.379  1.00 50.05           C
ATOM   3294  N   CYS B  52      23.517  62.332  93.176  1.00 49.70           N
ATOM   3295  CA  CYS B  52      24.931  62.623  93.338  1.00 54.28           C
ATOM   3296  C   CYS B  52      25.512  61.922  94.552  1.00 56.80           C
ATOM   3297  O   CYS B  52      25.890  62.565  95.530  1.00 53.20           O
ATOM   3298  CB  CYS B  52      25.119  64.124  93.478  1.00 57.48           C
ATOM   3299  SG  CYS B  52      26.853  64.677  93.566  1.00 73.77           S
ATOM   3300  N   ASN B  53      25.591  60.600  94.476  1.00 59.82           N
ATOM   3301  CA  ASN B  53      26.111  59.793  95.571  1.00 60.46           C
ATOM   3302  C   ASN B  53      27.616  59.596  95.445  1.00 58.92           C
ATOM   3303  O   ASN B  53      28.094  59.124  94.413  1.00 56.03           O
ATOM   3304  CB  ASN B  53      25.418  58.441  95.571  1.00 63.87           C
ATOM   3305  CG  ASN B  53      25.860  57.580  96.705  1.00 68.19           C
ATOM   3306  OD1 ASN B  53      27.047  57.317  96.870  1.00 71.70           O
ATOM   3307  ND2 ASN B  53      24.909  57.127  97.503  1.00 71.00           N
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ATOM   3308  N   LEU B  54      28.360  59.928  96.500  1.00 56.67           N
ATOM   3309  CA  LEU B  54      29.819  59.803  96.462  1.00 57.08           C
ATOM   3310  C   LEU B  54      30.455  58.922  97.529  1.00 61.91           C
ATOM   3311  O   LEU B  54      31.636  58.579  97.426  1.00 60.19           O
ATOM   3312  CB  LEU B  54      30.471  61.180  96.546  1.00 51.97           C
ATOM   3313  CG  LEU B  54      30.143  62.191  95.451  1.00 51.87           C
ATOM   3314  CD1 LEU B  54      28.706  62.656  95.574  1.00 48.76           C
ATOM   3315  CD2 LEU B  54      31.079  63.368  95.588  1.00 58.12           C
ATOM   3316  N   ASP B  55      29.683  58.563  98.549  1.00 70.74           N
ATOM   3317  CA  ASP B  55      30.187  57.742  99.648  1.00 77.32           C
ATOM   3318  C   ASP B  55      30.422  56.293  99.242  1.00 76.59           C
ATOM   3319  O   ASP B  55      29.631  55.411  99.579  1.00 78.43           O
ATOM   3320  CB  ASP B  55      29.201  57.793 100.812  1.00 88.92           C
ATOM   3321  CG  ASP B  55      29.798  57.286 102.105  1.00 97.30           C
ATOM   3322  OD1 ASP B  55      29.064  57.257 103.113  1.00103.84           O
ATOM   3323  OD2 ASP B  55      30.995  56.925 102.118  1.00 99.30           O
ATOM   3324  N   CYS B  56      31.520  56.047  98.535  1.00 73.09           N
ATOM   3325  CA  CYS B  56      31.839  54.703  98.077  1.00 76.41           C
ATOM   3326  C   CYS B  56      32.452  53.900  99.204  1.00 78.53           C
ATOM   3327  O   CYS B  56      32.976  52.807  98.989  1.00 79.36           O
ATOM   3328  CB  CYS B  56      32.784  54.789  96.879  1.00 82.84           C
ATOM   3329  SG  CYS B  56      32.138  55.971  95.651  1.00 97.54           S
ATOM   3330  N   GLN B  57      32.383  54.465 100.408  1.00 82.60           N
ATOM   3331  CA  GLN B  57      32.905  53.825 101.609  1.00 88.03           C
ATOM   3332  C   GLN B  57      31.775  53.063 102.279  1.00 88.25           C
ATOM   3333  O   GLN B  57      31.862  51.855 102.485  1.00 94.35           O
ATOM   3334  CB  GLN B  57      33.456  54.863 102.599  1.00 88.55           C
ATOM   3335  CG  GLN B  57      34.574  55.742 102.053  1.00 99.60           C
ATOM   3336  CD  GLN B  57      35.706  54.944 101.433  1.00105.30           C
ATOM   3337  OE1 GLN B  57      36.355  54.140 102.101  1.00105.35           O
ATOM   3338  NE2 GLN B  57      35.949  55.164 100.147  1.00106.68           N
ATOM   3339  N   GLU B  58      30.704  53.775 102.609  1.00 84.13           N
ATOM   3340  CA  GLU B  58      29.565  53.155 103.273  1.00 85.28           C
ATOM   3341  C   GLU B  58      28.336  53.045 102.376  1.00 86.43           C
ATOM   3342  O   GLU B  58      27.279  52.619 102.815  1.00 94.65           O
ATOM   3343  CB  GLU B  58      29.203  53.945 104.523  1.00 87.78           C
ATOM   3344  CG  GLU B  58      30.368  54.171 105.457  1.00 95.96           C
ATOM   3345  CD  GLU B  58      30.004  55.072 106.615  1.00106.71           C
ATOM   3346  OE1 GLU B  58      29.694  56.257 106.374  1.00111.67           O
ATOM   3347  OE2 GLU B  58      30.018  54.595 107.767  1.00112.58           O
ATOM   3348  N   GLU B  59      28.467  53.436 101.119  1.00 81.94           N
ATOM   3349  CA  GLU B  59      27.354  53.340 100.183  1.00 81.74           C
ATOM   3350  C   GLU B  59      27.941  53.138  98.796  1.00 77.25           C
ATOM   3351  O   GLU B  59      27.760  53.963  97.908  1.00 82.71           O
ATOM   3352  CB  GLU B  59      26.507  54.611 100.228  1.00 85.39           C
ATOM   3353  CG  GLU B  59      25.627  54.740 101.467  1.00101.19           C
ATOM   3354  CD  GLU B  59      24.726  53.529 101.668  1.00107.93           C
ATOM   3355  OE1 GLU B  59      24.135  53.059 100.676  1.00111.69           O
ATOM   3356  OE2 GLU B  59      24.587  53.050 102.814  1.00112.86           O
ATOM   3357  N   PRO B  60      28.642  52.012  98.589  1.00 69.56           N
ATOM   3358  CA  PRO B  60      29.279  51.691  97.310  1.00 62.09           C
ATOM   3359  C   PRO B  60      28.385  51.308  96.134  1.00 55.61           C
ATOM   3360  O   PRO B  60      28.760  51.498  94.972  1.00 50.15           O
ATOM   3361  CB  PRO B  60      30.239  50.574  97.694  1.00 64.29           C
ATOM   3362  CG  PRO B  60      29.434  49.814  98.695  1.00 64.33           C
ATOM   3363  CD  PRO B  60      28.812  50.902  99.546  1.00 63.75           C
ATOM   3364  N   ASP B  61      27.212  50.762  96.419  1.00 52.52           N
ATOM   3365  CA  ASP B  61      26.320  50.354  95.344  1.00 55.79           C
ATOM   3366  C   ASP B  61      25.635  51.539  94.677  1.00 55.81           C
ATOM   3367  O   ASP B  61      25.386  51.505  93.481  1.00 52.43           O
ATOM   3368  CB  ASP B  61      25.286  49.359  95.870  1.00 63.61           C
ATOM   3369  CG  ASP B  61      25.904  48.019  96.236  1.00 69.03           C
ATOM   3370  OD1 ASP B  61      26.211  47.231  95.318  1.00 67.01           O
ATOM   3371  OD2 ASP B  61      26.097  47.761  97.443  1.00 71.87           O
ATOM   3372  N   SER B  62      25.345  52.586  95.445  1.00 61.52           N
ATOM   3373  CA  SER B  62      24.699  53.783  94.900  1.00 62.45           C
ATOM   3374  C   SER B  62      25.776  54.741  94.388  1.00 55.68           C
ATOM   3375  O   SER B  62      25.516  55.646  93.592  1.00 54.61           O
ATOM   3376  CB  SER B  62      23.880  54.496  95.988  1.00 71.31           C
ATOM   3377  OG  SER B  62      22.989  53.619  96.659  1.00 78.96           O
ATOM   3378  N   CYS B  63      26.995  54.517  94.860  1.00 47.03           N
ATOM   3379  CA  CYS B  63      28.144  55.338  94.520  1.00 48.82           C
ATOM   3380  C   CYS B  63      28.362  55.485  93.022  1.00 50.63           C
ATOM   3381  O   CYS B  63      28.355  54.503  92.280  1.00 55.82           O
ATOM   3382  CB  CYS B  63      29.371  54.738  95.212  1.00 61.40           C
ATOM   3383  SG  CYS B  63      30.998  54.841  94.398  1.00 90.41           S
ATOM   3384  N   ILE B  64      28.546  56.726  92.585  1.00 45.46           N
ATOM   3385  CA  ILE B  64      28.774  57.038  91.173  1.00 41.72           C
ATOM   3386  C   ILE B  64      30.222  56.744  90.743  1.00 45.40           C
ATOM   3387  O   ILE B  64      31.114  57.574  90.946  1.00 52.52           O
ATOM   3388  CB  ILE B  64      28.458  58.533  90.897  1.00 35.88           C
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ATOM   3389  CG1 ILE B  64      27.000  58.827  91.255  1.00 44.28           C
ATOM   3390  CG2 ILE B  64      28.729  58.878  89.439  1.00 32.95           C
ATOM   3391  CD1 ILE B  64      26.614  60.270  91.062  1.00 55.94           C
ATOM   3392  N   SER B  65      30.454  55.573  90.145  1.00 41.54           N
ATOM   3393  CA  SER B  65      31.801  55.199  89.711  1.00 41.35           C
ATOM   3394  C   SER B  65      31.795  54.426  88.410  1.00 42.46           C
ATOM   3395  O   SER B  65      30.788  53.821  88.047  1.00 42.39           O
ATOM   3396  CB  SER B  65      32.465  54.307  90.745  1.00 46.37           C
ATOM   3397  OG  SER B  65      32.080  52.963  90.507  1.00 44.54           O
ATOM   3398  N   GLU B  66      32.940  54.420  87.730  1.00 49.26           N
ATOM   3399  CA  GLU B  66      33.075  53.693  86.474  1.00 55.60           C
ATOM   3400  C   GLU B  66      32.698  52.242  86.694  1.00 57.45           C
ATOM   3401  O   GLU B  66      32.176  51.580  85.806  1.00 60.04           O
ATOM   3402  CB  GLU B  66      34.509  53.771  85.942  1.00 54.09           C
ATOM   3403  CG  GLU B  66      35.592  53.461  86.970  1.00 63.92           C
ATOM   3404  CD  GLU B  66      36.947  53.196  86.327  1.00 69.85           C
ATOM   3405  OE1 GLU B  66      37.090  52.141  85.679  1.00 73.92           O
ATOM   3406  OE2 GLU B  66      37.863  54.037  86.454  1.00 72.73           O
ATOM   3407  N   LYS B  67      32.977  51.737  87.883  1.00 59.92           N
ATOM   3408  CA  LYS B  67      32.631  50.360  88.180  1.00 62.93           C
ATOM   3409  C   LYS B  67      31.130  50.157  87.967  1.00 54.45           C
ATOM   3410  O   LYS B  67      30.709  49.204  87.311  1.00 50.58           O
ATOM   3411  CB  LYS B  67      33.033  50.023  89.618  1.00 79.48           C
ATOM   3412  CG  LYS B  67      34.547  50.023  89.847  1.00 91.15           C
ATOM   3413  CD  LYS B  67      34.911  49.554  91.249  1.00100.90           C
ATOM   3414  CE  LYS B  67      36.418  49.369  91.418  1.00105.90           C
ATOM   3415  NZ  LYS B  67      36.765  48.894  92.794  1.00107.32           N
ATOM   3416  N   LEU B  68      30.333  51.079  88.496  1.00 48.57           N
ATOM   3417  CA  LEU B  68      28.881  51.013  88.369  1.00 47.24           C
ATOM   3418  C   LEU B  68      28.386  50.985  86.915  1.00 41.16           C
ATOM   3419  O   LEU B  68      27.645  50.090  86.498  1.00 35.63           O
ATOM   3420  CB  LEU B  68      28.257  52.198  89.113  1.00 51.16           C
ATOM   3421  CG  LEU B  68      26.727  52.242  89.171  1.00 48.40           C
ATOM   3422  CD1 LEU B  68      26.210  50.875  89.600  1.00 54.14           C
ATOM   3423  CD2 LEU B  68      26.261  53.348  90.124  1.00 45.95           C
ATOM   3424  N   PHE B  69      28.803  51.973  86.142  1.00 40.32           N
ATOM   3425  CA  PHE B  69      28.400  52.057  84.736  1.00 44.21           C
ATOM   3426  C   PHE B  69      28.738  50.779  83.956  1.00 47.20           C
ATOM   3427  O   PHE B  69      27.975  50.352  83.076  1.00 48.55           O
ATOM   3428  CB  PHE B  69      29.072  53.268  84.075  1.00 46.24           C
ATOM   3429  CG  PHE B  69      28.452  54.593  84.465  1.00 43.45           C
ATOM   3430  CD1 PHE B  69      27.190  54.948  83.995  1.00 41.14           C
ATOM   3431  CD2 PHE B  69      29.124  55.483  85.297  1.00 45.13           C
ATOM   3432  CE1 PHE B  69      26.616  56.165  84.346  1.00 48.56           C
ATOM   3433  CE2 PHE B  69      28.555  56.701  85.651  1.00 47.33           C
ATOM   3434  CZ  PHE B  69      27.300  57.041  85.174  1.00 51.58           C
ATOM   3435  N   MET B  70      29.887  50.184  84.282  1.00 50.28           N
ATOM   3436  CA  MET B  70      30.337  48.953  83.637  1.00 59.26           C
ATOM   3437  C   MET B  70      29.301  47.882  83.903  1.00 63.24           C
ATOM   3438  O   MET B  70      28.943  47.106  83.014  1.00 67.06           O
ATOM   3439  CB  MET B  70      31.671  48.482  84.217  1.00 62.36           C
ATOM   3440  CG  MET B  70      32.853  49.354  83.895  1.00 72.79           C
ATOM   3441  SD  MET B  70      34.309  48.718  84.728  1.00 76.49           S
ATOM   3442  CE  MET B  70      34.462  47.114  83.929  1.00 71.92           C
ATOM   3443  N   GLU B  71      28.836  47.826  85.144  1.00 62.74           N
ATOM   3444  CA  GLU B  71      27.849  46.836  85.467  1.00 60.66           C
ATOM   3445  C   GLU B  71      26.661  47.124  84.582  1.00 56.18           C
ATOM   3446  O   GLU B  71      26.330  46.328  83.704  1.00 59.03           O
ATOM   3447  CB  GLU B  71      27.443  46.922  86.926  1.00 63.14           C
ATOM   3448  CG  GLU B  71      26.921  45.613  87.451  1.00 72.51           C
ATOM   3449  CD  GLU B  71      26.586  45.694  88.911  1.00 79.12           C
ATOM   3450  OE1 GLU B  71      26.584  44.640  89.578  1.00 79.54           O
ATOM   3451  OE2 GLU B  71      26.322  46.819  89.387  1.00 77.19           O
ATOM   3452  N   MET B  72      26.045  48.283  84.793  1.00 52.94           N
ATOM   3453  CA  MET B  72      24.887  48.669  84.005  1.00 55.03           C
ATOM   3454  C   MET B  72      25.057  48.295  82.545  1.00 55.02           C
ATOM   3455  O   MET B  72      24.247  47.548  81.993  1.00 59.67           O
ATOM   3456  CB  MET B  72      24.611  50.171  84.128  1.00 51.43           C
ATOM   3457  CG  MET B  72      23.672  50.528  85.269  1.00 45.55           C
ATOM   3458  SD  MET B  72      22.168  49.503  85.293  1.00 56.76           S
ATOM   3459  CE  MET B  72      21.816  49.419  87.103  1.00 45.65           C
ATOM   3460  N   ALA B  73      26.118  48.796  81.924  1.00 52.08           N
ATOM   3461  CA  ALA B  73      26.368  48.500  80.522  1.00 55.06           C
ATOM   3462  C   ALA B  73      26.100  47.025  80.244  1.00 58.38           C
ATOM   3463  O   ALA B  73      25.221  46.680  79.451  1.00 59.76           O
ATOM   3464  CB  ALA B  73      27.804  48.849  80.165  1.00 54.06           C
ATOM   3465  N   GLU B  74      26.850  46.168  80.929  1.00 60.51           N
ATOM   3466  CA  GLU B  74      26.737  44.725  80.779  1.00 60.28           C
ATOM   3467  C   GLU B  74      25.282  44.302  80.665  1.00 54.03           C
ATOM   3468  O   GLU B  74      24.871  43.688  79.677  1.00 49.01           O
ATOM   3469  CB  GLU B  74      27.376  44.027  81.985  1.00 70.28           C
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ATOM   3470  CG  GLU B  74      28.317  42.887  81.627  1.00 88.79           C
ATOM   3471  CD  GLU B  74      27.645  41.798  80.805  1.00100.69           C
ATOM   3472  OE1 GLU B  74      26.753  41.105  81.341  1.00106.44           O
ATOM   3473  OE2 GLU B  74      28.006  41.636  79.619  1.00105.25           O
ATOM   3474  N   LEU B  75      24.514  44.660  81.690  1.00 51.75           N
ATOM   3475  CA  LEU B  75      23.097  44.333  81.783  1.00 50.39           C
ATOM   3476  C   LEU B  75      22.227  44.748  80.600  1.00 48.71           C
ATOM   3477  O   LEU B  75      21.553  43.911  79.997  1.00 51.38           O
ATOM   3478  CB  LEU B  75      22.512  44.939  83.053  1.00 54.68           C
ATOM   3479  CG  LEU B  75      22.923  44.280  84.365  1.00 60.00           C
ATOM   3480  CD1 LEU B  75      24.431  44.293  84.522  1.00 66.87           C
ATOM   3481  CD2 LEU B  75      22.258  45.017  85.507  1.00 65.84           C
ATOM   3482  N   MET B  76      22.214  46.035  80.278  1.00 44.91           N
ATOM   3483  CA  MET B  76      21.392  46.500  79.173  1.00 50.42           C
ATOM   3484  C   MET B  76      21.421  45.474  78.046  1.00 55.62           C
ATOM   3485  O   MET B  76      20.414  45.210  77.394  1.00 62.87           O
ATOM   3486  CB  MET B  76      21.897  47.858  78.686  1.00 41.64           C
ATOM   3487  CG  MET B  76      21.718  48.971  79.703  1.00 39.29           C
ATOM   3488  SD  MET B  76      22.349  50.547  79.110  1.00 40.97           S
ATOM   3489  CE  MET B  76      21.001  50.979  77.992  1.00 38.29           C
ATOM   3490  N   VAL B  77      22.596  44.890  77.852  1.00 56.45           N
ATOM   3491  CA  VAL B  77      22.826  43.874  76.832  1.00 57.26           C
ATOM   3492  C   VAL B  77      22.219  42.535  77.268  1.00 56.69           C
ATOM   3493  O   VAL B  77      21.548  41.859  76.486  1.00 58.33           O
ATOM   3494  CB  VAL B  77      24.347  43.677  76.595  1.00 58.52           C
ATOM   3495  CG1 VAL B  77      24.577  42.711  75.467  1.00 64.12           C
ATOM   3496  CG2 VAL B  77      25.015  45.014  76.305  1.00 62.67           C
ATOM   3497  N   SER B  78      22.463  42.179  78.530  1.00 54.01           N
ATOM   3498  CA  SER B  78      21.979  40.937  79.130  1.00 54.88           C
ATOM   3499  C   SER B  78      20.480  40.723  79.009  1.00 59.60           C
ATOM   3500  O   SER B  78      20.026  39.975  78.148  1.00 63.77           O
ATOM   3501  CB  SER B  78      22.357  40.871  80.604  1.00 53.95           C
ATOM   3502  OG  SER B  78      23.759  40.876  80.768  1.00 55.24           O
ATOM   3503  N   GLU B  79      19.704  41.361  79.876  1.00 62.46           N
ATOM   3504  CA  GLU B  79      18.256  41.198  79.840  1.00 65.67           C
ATOM   3505  C   GLU B  79      17.596  41.854  78.640  1.00 62.34           C
ATOM   3506  O   GLU B  79      16.463  42.319  78.706  1.00 57.87           O
ATOM   3507  CB  GLU B  79      17.621  41.771  81.109  1.00 73.87           C
ATOM   3508  CG  GLU B  79      18.006  41.035  82.382  1.00 77.59           C
ATOM   3509  CD  GLU B  79      17.497  39.608  82.407  1.00 75.00           C
ATOM   3510  OE1 GLU B  79      16.351  39.378  81.966  1.00 81.09           O
ATOM   3511  OE2 GLU B  79      18.244  38.719  82.868  1.00 68.80           O
ATOM   3512  N   GLY B  80      18.335  41.892  77.546  1.00 66.49           N
ATOM   3513  CA  GLY B  80      17.823  42.437  76.305  1.00 70.49           C
ATOM   3514  C   GLY B  80      17.217  43.824  76.282  1.00 65.38           C
ATOM   3515  O   GLY B  80      16.159  44.027  75.676  1.00 63.73           O
ATOM   3516  N   TRP B  81      17.873  44.778  76.938  1.00 58.71           N
ATOM   3517  CA  TRP B  81      17.391  46.155  76.928  1.00 49.89           C
ATOM   3518  C   TRP B  81      17.781  46.751  75.582  1.00 47.71           C
ATOM   3519  O   TRP B  81      16.982  47.408  74.906  1.00 43.13           O
ATOM   3520  CB  TRP B  81      18.031  46.964  78.046  1.00 39.95           C
ATOM   3521  CG  TRP B  81      17.513  46.578  79.378  1.00 41.75           C
ATOM   3522  CD1 TRP B  81      18.116  45.766  80.293  1.00 49.58           C
ATOM   3523  CD2 TRP B  81      16.262  46.969  79.947  1.00 44.93           C
ATOM   3524  NE1 TRP B  81      17.316  45.629  81.404  1.00 51.02           N
ATOM   3525  CE2 TRP B  81      16.169  46.356  81.217  1.00 47.47           C
ATOM   3526  CE3 TRP B  81      15.206  47.775  79.506  1.00 49.30           C
ATOM   3527  CZ2 TRP B  81      15.060  46.527  82.055  1.00 51.93           C
ATOM   3528  CZ3 TRP B  81      14.102  47.944  80.340  1.00 54.66           C
ATOM   3529  CH2 TRP B  81      14.039  47.321  81.597  1.00 56.17           C
ATOM   3530  N   LYS B  82      19.026  46.503  75.196  1.00 47.14           N
ATOM   3531  CA  LYS B  82      19.542  46.992  73.932  1.00 46.37           C
ATOM   3532  C   LYS B  82      18.597  46.581  72.816  1.00 42.01           C
ATOM   3533  O   LYS B  82      18.156  47.412  72.034  1.00 41.69           O
ATOM   3534  CB  LYS B  82      20.931  46.414  73.687  1.00 54.64           C
ATOM   3535  CG  LYS B  82      21.640  46.992  72.484  1.00 57.29           C
ATOM   3536  CD  LYS B  82      23.098  46.567  72.483  1.00 68.46           C
ATOM   3537  CE  LYS B  82      23.779  46.955  71.188  1.00 77.68           C
ATOM   3538  NZ  LYS B  82      23.091  46.322  70.027  1.00 86.52           N
ATOM   3539  N   ASP B  83      18.274  45.293  72.768  1.00 40.57           N
ATOM   3540  CA  ASP B  83      17.377  44.734  71.759  1.00 54.12           C
ATOM   3541  C   ASP B  83      16.059  45.499  71.646  1.00 58.47           C
ATOM   3542  O   ASP B  83      15.521  45.673  70.554  1.00 64.42           O
ATOM   3543  CB  ASP B  83      17.064  43.269  72.085  1.00 62.53           C
ATOM   3544  CG  ASP B  83      18.301  42.388  72.105  1.00 66.47           C
ATOM   3545  OD1 ASP B  83      18.214  41.259  72.633  1.00 69.11           O
ATOM   3546  OD2 ASP B  83      19.355  42.813  71.594  1.00 67.33           O
ATOM   3547  N   ALA B  84      15.541  45.953  72.782  1.00 59.07           N
ATOM   3548  CA  ALA B  84      14.275  46.678  72.805  1.00 57.00           C
ATOM   3549  C   ALA B  84      14.391  48.105  72.302  1.00 53.21           C
ATOM   3550  O   ALA B  84      13.398  48.697  71.895  1.00 54.97           O
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ATOM   3551  CB  ALA B  84      13.693  46.672  74.208  1.00 64.01           C
ATOM   3552  N   GLY B  85      15.595  48.664  72.333  1.00 47.70           N
ATOM   3553  CA  GLY B  85      15.761  50.021  71.848  1.00 45.23           C
ATOM   3554  C   GLY B  85      16.727  50.905  72.611  1.00 45.80           C
ATOM   3555  O   GLY B  85      17.442  51.704  72.001  1.00 43.19           O
ATOM   3556  N   TYR B  86      16.746  50.788  73.938  1.00 45.96           N
ATOM   3557  CA  TYR B  86      17.640  51.608  74.755  1.00 46.92           C
ATOM   3558  C   TYR B  86      19.037  51.309  74.270  1.00 47.08           C
ATOM   3559  O   TYR B  86      19.473  50.164  74.295  1.00 57.42           O
ATOM   3560  CB  TYR B  86      17.479  51.243  76.222  1.00 52.22           C
ATOM   3561  CG  TYR B  86      16.042  51.356  76.651  1.00 52.78           C
ATOM   3562  CD1 TYR B  86      15.501  52.581  77.023  1.00 50.28           C
ATOM   3563  CD2 TYR B  86      15.201  50.247  76.616  1.00 56.77           C
ATOM   3564  CE1 TYR B  86      14.154  52.697  77.351  1.00 53.62           C
ATOM   3565  CE2 TYR B  86      13.852  50.352  76.939  1.00 59.13           C
ATOM   3566  CZ  TYR B  86      13.336  51.578  77.307  1.00 60.42           C
ATOM   3567  OH  TYR B  86      12.008  51.685  77.646  1.00 66.24           O
ATOM   3568  N   GLU B  87      19.732  52.338  73.811  1.00 43.55           N
ATOM   3569  CA  GLU B  87      21.066  52.147  73.275  1.00 42.08           C
ATOM   3570  C   GLU B  87      22.058  53.155  73.814  1.00 32.09           C
ATOM   3571  O   GLU B  87      23.246  53.075  73.542  1.00 31.92           O
ATOM   3572  CB  GLU B  87      20.988  52.224  71.756  1.00 57.82           C
ATOM   3573  CG  GLU B  87      22.288  52.407  71.031  1.00 79.46           C
ATOM   3574  CD  GLU B  87      22.061  52.534  69.540  1.00 94.32           C
ATOM   3575  OE1 GLU B  87      21.164  53.316  69.146  1.00 93.22           O
ATOM   3576  OE2 GLU B  87      22.773  51.859  68.764  1.00105.72           O
ATOM   3577  N   TYR B  88      21.564  54.095  74.602  1.00 28.08           N
ATOM   3578  CA  TYR B  88      22.418  55.120  75.187  1.00 28.39           C
ATOM   3579  C   TYR B  88      22.546  55.016  76.705  1.00 32.01           C
ATOM   3580  O   TYR B  88      21.556  55.062  77.431  1.00 40.48           O
ATOM   3581  CB  TYR B  88      21.884  56.505  74.829  1.00 33.19           C
ATOM   3582  CG  TYR B  88      22.226  56.962  73.436  1.00 37.55           C
ATOM   3583  CD1 TYR B  88      23.396  57.683  73.184  1.00 42.68           C
ATOM   3584  CD2 TYR B  88      21.375  56.693  72.377  1.00 47.22           C
ATOM   3585  CE1 TYR B  88      23.709  58.133  71.914  1.00 43.08           C
ATOM   3586  CE2 TYR B  88      21.673  57.136  71.092  1.00 51.13           C
ATOM   3587  CZ  TYR B  88      22.843  57.860  70.864  1.00 42.93           C
ATOM   3588  OH  TYR B  88      23.136  58.323  69.595  1.00 38.53           O
ATOM   3589  N   LEU B  89      23.776  54.885  77.183  1.00 27.32           N
ATOM   3590  CA  LEU B  89      24.037  54.794  78.617  1.00 28.99           C
ATOM   3591  C   LEU B  89      24.711  56.127  78.944  1.00 32.72           C
ATOM   3592  O   LEU B  89      25.780  56.433  78.406  1.00 22.54           O
ATOM   3593  CB  LEU B  89      24.963  53.605  78.879  1.00 29.88           C
ATOM   3594  CG  LEU B  89      25.375  53.272  80.302  1.00 40.95           C
ATOM   3595  CD1 LEU B  89      24.159  53.175  81.182  1.00 55.49           C
ATOM   3596  CD2 LEU B  89      26.140  51.964  80.284  1.00 37.32           C
ATOM   3597  N   CYS B  90      24.090  56.930  79.804  1.00 39.74           N
ATOM   3598  CA  CYS B  90      24.645  58.242  80.108  1.00 43.17           C
ATOM   3599  C   CYS B  90      24.920  58.599  81.545  1.00 46.82           C
ATOM   3600  O   CYS B  90      24.175  58.230  82.463  1.00 48.55           O
ATOM   3601  CB  CYS B  90      23.750  59.298  79.503  1.00 43.07           C
ATOM   3602  SG  CYS B  90      23.343  58.858  77.818  1.00 53.47           S
ATOM   3603  N   ILE B  91      26.006  59.348  81.712  1.00 44.38           N
ATOM   3604  CA  ILE B  91      26.459  59.813  83.012  1.00 33.49           C
ATOM   3605  C   ILE B  91      25.927  61.213  83.230  1.00 34.00           C
ATOM   3606  O   ILE B  91      25.935  62.044  82.316  1.00 42.32           O
ATOM   3607  CB  ILE B  91      27.984  59.908  83.084  1.00 26.35           C
ATOM   3608  CG1 ILE B  91      28.613  58.593  82.651  1.00 32.38           C
ATOM   3609  CG2 ILE B  91      28.408  60.256  84.504  1.00 23.86           C
ATOM   3610  CD1 ILE B  91      30.107  58.652  82.576  1.00 37.01           C
ATOM   3611  N   ASP B  92      25.474  61.471  84.447  1.00 29.43           N
ATOM   3612  CA  ASP B  92      24.952  62.772  84.791  1.00 31.27           C
ATOM   3613  C   ASP B  92      25.983  63.421  85.714  1.00 33.43           C
ATOM   3614  O   ASP B  92      27.079  62.883  85.915  1.00 35.70           O
ATOM   3615  CB  ASP B  92      23.586  62.616  85.477  1.00 29.94           C
ATOM   3616  CG  ASP B  92      22.875  63.943  85.688  1.00 30.39           C
ATOM   3617  OD1 ASP B  92      23.111  64.584  86.735  1.00 32.37           O
ATOM   3618  OD2 ASP B  92      22.082  64.348  84.806  1.00 18.07           O
ATOM   3619  N   ASP B  93      25.626  64.572  86.269  1.00 32.81           N
ATOM   3620  CA  ASP B  93      26.496  65.324  87.158  1.00 36.97           C
ATOM   3621  C   ASP B  93      27.234  64.452  88.182  1.00 38.38           C
ATOM   3622  O   ASP B  93      26.832  63.311  88.472  1.00 34.55           O
ATOM   3623  CB  ASP B  93      25.674  66.384  87.903  1.00 40.48           C
ATOM   3624  CG  ASP B  93      26.494  67.609  88.276  1.00 43.57           C
ATOM   3625  OD1 ASP B  93      27.712  67.466  88.536  1.00 46.43           O
ATOM   3626  OD2 ASP B  93      25.915  68.718  88.325  1.00 37.49           O
ATOM   3627  N   CYS B  94      28.325  64.999  88.713  1.00 39.48           N
ATOM   3628  CA  CYS B  94      29.107  64.320  89.739  1.00 42.25           C
ATOM   3629  C   CYS B  94      30.016  63.202  89.254  1.00 42.15           C
ATOM   3630  O   CYS B  94      30.416  62.336  90.028  1.00 36.63           O
ATOM   3631  CB  CYS B  94      28.154  63.822  90.839  1.00 48.72           C
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ATOM   3632  SG  CYS B  94      27.315  65.237  91.653  1.00 73.66           S
ATOM   3633  N   TRP B  95      30.366  63.237  87.978  1.00 43.99           N
ATOM   3634  CA  TRP B  95      31.243  62.219  87.420  1.00 50.45           C
ATOM   3635  C   TRP B  95      32.653  62.796  87.345  1.00 56.13           C
ATOM   3636  O   TRP B  95      33.629  62.062  87.155  1.00 56.63           O
ATOM   3637  CB  TRP B  95      30.811  61.883  86.002  1.00 54.40           C
ATOM   3638  CG  TRP B  95      30.992  63.057  85.087  1.00 59.17           C
ATOM   3639  CD1 TRP B  95      30.086  64.036  84.823  1.00 64.81           C
ATOM   3640  CD2 TRP B  95      32.181  63.403  84.354  1.00 63.77           C
ATOM   3641  NE1 TRP B  95      30.631  64.968  83.963  1.00 67.76           N
ATOM   3642  CE2 TRP B  95      31.910  64.596  83.654  1.00 65.92           C
ATOM   3643  CE3 TRP B  95      33.440  62.808  84.205  1.00 67.47           C
ATOM   3644  CZ2 TRP B  95      32.852  65.218  82.841  1.00 69.16           C
ATOM   3645  CZ3 TRP B  95      34.383  63.430  83.388  1.00 68.21           C
ATOM   3646  CH2 TRP B  95      34.075  64.619  82.709  1.00 71.32           C
ATOM   3647  N   MET B  96      32.738  64.117  87.469  1.00 65.90           N
ATOM   3648  CA  MET B  96      34.003  64.819  87.355  1.00 75.90           C
ATOM   3649  C   MET B  96      34.798  65.081  88.631  1.00 82.19           C
ATOM   3650  O   MET B  96      34.248  65.254  89.721  1.00 81.85           O
ATOM   3651  CB  MET B  96      33.766  66.140  86.639  1.00 73.16           C
ATOM   3652  CG  MET B  96      32.586  66.921  87.183  1.00 68.39           C
ATOM   3653  SD  MET B  96      32.333  68.458  86.294  1.00 71.72           S
ATOM   3654  CE  MET B  96      31.894  67.850  84.646  1.00 55.21           C
ATOM   3655  N   ALA B  97      36.116  65.098  88.475  1.00 84.61           N
ATOM   3656  CA  ALA B  97      37.002  65.377  89.584  1.00 79.26           C
ATOM   3657  C   ALA B  97      36.835  66.871  89.799  1.00 74.19           C
ATOM   3658  O   ALA B  97      36.292  67.569  88.945  1.00 75.52           O
ATOM   3659  CB  ALA B  97      38.437  65.050  89.209  1.00 81.06           C
ATOM   3660  N   PRO B  98      37.294  67.375  90.948  1.00 71.08           N
ATOM   3661  CA  PRO B  98      37.241  68.777  91.376  1.00 74.89           C
ATOM   3662  C   PRO B  98      37.700  69.889  90.434  1.00 77.18           C
ATOM   3663  O   PRO B  98      37.198  71.004  90.537  1.00 76.09           O
ATOM   3664  CB  PRO B  98      38.034  68.756  92.672  1.00 79.16           C
ATOM   3665  CG  PRO B  98      37.635  67.444  93.247  1.00 74.74           C
ATOM   3666  CD  PRO B  98      37.786  66.527  92.048  1.00 72.46           C
ATOM   3667  N   GLN B  99      38.659  69.619  89.551  1.00 80.93           N
ATOM   3668  CA  GLN B  99      39.103  70.651  88.607  1.00 89.74           C
ATOM   3669  C   GLN B  99      39.982  70.141  87.464  1.00 95.92           C
ATOM   3670  O   GLN B  99      40.448  69.005  87.477  1.00100.48           O
ATOM   3671  CB  GLN B  99      39.825  71.799  89.327  1.00 87.34           C
ATOM   3672  CG  GLN B  99      41.174  71.455  89.914  1.00 94.17           C
ATOM   3673  CD  GLN B  99      41.068  70.662  91.191  1.00 97.88           C
ATOM   3674  OE1 GLN B  99      40.660  69.502  91.186  1.00100.01           O
ATOM   3675  NE2 GLN B  99      41.428  71.292  92.304  1.00 95.39           N
ATOM   3676  N   ARG B 100      40.212  70.991  86.472  1.00104.87           N
ATOM   3677  CA  ARG B 100      41.010  70.616  85.307  1.00109.18           C
ATOM   3678  C   ARG B 100      42.387  70.068  85.681  1.00105.78           C
ATOM   3679  O   ARG B 100      42.724  69.930  86.856  1.00104.49           O
ATOM   3680  CB  ARG B 100      41.187  71.831  84.390  1.00118.39           C
ATOM   3681  CG  ARG B 100      39.943  72.698  84.222  1.00121.02           C
ATOM   3682  CD  ARG B 100      38.970  72.146  83.205  1.00120.33           C
ATOM   3683  NE  ARG B 100      37.794  73.002  83.099  1.00118.72           N
ATOM   3684  CZ  ARG B 100      36.891  72.915  82.129  1.00119.00           C
ATOM   3685  NH1 ARG B 100      37.028  72.009  81.172  1.00116.72           N
ATOM   3686  NH2 ARG B 100      35.847  73.729  82.123  1.00120.98           N
ATOM   3687  N   ASP B 101      43.176  69.753  84.662  1.00103.43           N
ATOM   3688  CA  ASP B 101      44.523  69.247  84.863  1.00104.26           C
ATOM   3689  C   ASP B 101      45.527  70.281  84.358  1.00108.42           C
ATOM   3690  O   ASP B 101      45.144  71.383  83.974  1.00106.79           O
ATOM   3691  CB  ASP B 101      44.712  67.909  84.132  1.00100.77           C
ATOM   3692  CG  ASP B 101      44.228  67.944  82.687  1.00 92.36           C
ATOM   3693  OD1 ASP B 101      44.716  68.791  81.906  1.00 92.02           O
ATOM   3694  OD2 ASP B 101      43.363  67.111  82.327  1.00 82.12           O
ATOM   3695  N   SER B 102      46.810  69.933  84.371  1.00112.28           N
ATOM   3696  CA  SER B 102      47.844  70.850  83.904  1.00113.66           C
ATOM   3697  C   SER B 102      47.454  71.429  82.549  1.00116.11           C
ATOM   3698  O   SER B 102      47.287  72.641  82.419  1.00116.14           O
ATOM   3699  CB  SER B 102      49.199  70.133  83.804  1.00110.50           C
ATOM   3700  OG  SER B 102      49.147  69.033  82.911  1.00107.72           O
ATOM   3701  N   GLU B 103      47.301  70.564  81.547  1.00118.95           N
ATOM   3702  CA  GLU B 103      46.914  71.010  80.210  1.00121.20           C
ATOM   3703  C   GLU B 103      45.749  71.994  80.371  1.00116.49           C
ATOM   3704  O   GLU B 103      45.803  73.122  79.880  1.00116.10           O
ATOM   3705  CB  GLU B 103      46.494  69.808  79.342  1.00132.15           C
ATOM   3706  CG  GLU B 103      46.137  70.133  77.875  1.00144.43           C
ATOM   3707  CD  GLU B 103      47.341  70.170  76.933  1.00147.61           C
ATOM   3708  OE1 GLU B 103      48.046  69.144  76.819  1.00147.17           O
ATOM   3709  OE2 GLU B 103      47.575  71.223  76.297  1.00146.67           O
ATOM   3710  N   GLY B 104      44.712  71.570  81.089  1.00110.30           N
ATOM   3711  CA  GLY B 104      43.562  72.428  81.309  1.00105.21           C
ATOM   3712  C   GLY B 104      42.230  71.764  81.005  1.00100.85           C
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ATOM   3713  O   GLY B 104      41.174  72.328  81.295  1.00 97.39           O
ATOM   3714  N   ARG B 105      42.273  70.567  80.425  1.00 97.66           N
ATOM   3715  CA  ARG B 105      41.060  69.833  80.080  1.00 96.21           C
ATOM   3716  C   ARG B 105      40.377  69.316  81.349  1.00 92.31           C
ATOM   3717  O   ARG B 105      40.800  69.632  82.462  1.00 87.06           O
ATOM   3718  CB  ARG B 105      41.402  68.669  79.133  1.00102.87           C
ATOM   3719  CG  ARG B 105      42.377  69.051  78.008  1.00106.88           C
ATOM   3720  CD  ARG B 105      42.190  68.239  76.722  1.00106.14           C
ATOM   3721  NE  ARG B 105      42.501  66.820  76.871  1.00104.40           N
ATOM   3722  CZ  ARG B 105      42.468  65.940  75.873  1.00102.19           C
ATOM   3723  NH1 ARG B 105      42.139  66.333  74.648  1.00100.44           N
ATOM   3724  NH2 ARG B 105      42.754  64.664  76.098  1.00 97.55           N
ATOM   3725  N   LEU B 106      39.320  68.527  81.183  1.00 91.24           N
ATOM   3726  CA  LEU B 106      38.579  67.979  82.321  1.00 87.88           C
ATOM   3727  C   LEU B 106      39.041  66.575  82.654  1.00 88.32           C
ATOM   3728  O   LEU B 106      39.451  65.818  81.777  1.00 91.46           O
ATOM   3729  CB  LEU B 106      37.082  67.957  82.012  1.00 84.87           C
ATOM   3730  CG  LEU B 106      36.466  69.345  81.848  1.00 84.82           C
ATOM   3731  CD1 LEU B 106      35.157  69.284  81.088  1.00 89.63           C
ATOM   3732  CD2 LEU B 106      36.277  69.941  83.226  1.00 88.35           C
ATOM   3733  N   GLN B 107      38.959  66.227  83.927  1.00 84.82           N
ATOM   3734  CA  GLN B 107      39.377  64.911  84.358  1.00 80.90           C
ATOM   3735  C   GLN B 107      38.419  64.301  85.362  1.00 75.49           C
ATOM   3736  O   GLN B 107      38.084  64.911  86.383  1.00 69.14           O
ATOM   3737  CB  GLN B 107      40.786  64.985  84.941  1.00 87.71           C
ATOM   3738  CG  GLN B 107      41.100  66.311  85.611  1.00 93.81           C
ATOM   3739  CD  GLN B 107      42.523  66.374  86.126  1.00 94.11           C
ATOM   3740  OE1 GLN B 107      43.441  65.855  85.495  1.00 95.26           O
ATOM   3741  NE2 GLN B 107      42.716  67.023  87.271  1.00 95.42           N
ATOM   3742  N   ALA B 108      37.973  63.090  85.052  1.00 72.11           N
ATOM   3743  CA  ALA B 108      37.056  62.378  85.924  1.00 68.89           C
ATOM   3744  C   ALA B 108      37.704  62.219  87.288  1.00 62.15           C
ATOM   3745  O   ALA B 108      38.926  62.221  87.408  1.00 59.29           O
ATOM   3746  CB  ALA B 108      36.733  61.010  85.337  1.00 77.88           C
ATOM   3747  N   ASP B 109      36.881  62.088  88.317  1.00 58.74           N
ATOM   3748  CA  ASP B 109      37.390  61.914  89.664  1.00 63.20           C
ATOM   3749  C   ASP B 109      38.417  60.789  89.614  1.00 67.57           C
ATOM   3750  O   ASP B 109      38.121  59.685  89.162  1.00 66.44           O
ATOM   3751  CB  ASP B 109      36.250  61.550  90.601  1.00 65.57           C
ATOM   3752  CG  ASP B 109      36.661  61.581  92.039  1.00 66.50           C
ATOM   3753  OD1 ASP B 109      37.003  62.676  92.529  1.00 65.69           O
ATOM   3754  OD2 ASP B 109      36.646  60.509  92.671  1.00 67.73           O
ATOM   3755  N   PRO B 110      39.640  61.058  90.083  1.00 71.79           N
ATOM   3756  CA  PRO B 110      40.723  60.074  90.086  1.00 74.11           C
ATOM   3757  C   PRO B 110      40.368  58.753  90.758  1.00 75.23           C
ATOM   3758  O   PRO B 110      40.658  57.678  90.229  1.00 77.28           O
ATOM   3759  CB  PRO B 110      41.846  60.802  90.823  1.00 77.75           C
ATOM   3760  CG  PRO B 110      41.548  62.248  90.574  1.00 73.78           C
ATOM   3761  CD  PRO B 110      40.061  62.293  90.763  1.00 72.47           C
ATOM   3762  N   GLN B 111      39.729  58.847  91.919  1.00 76.43           N
ATOM   3763  CA  GLN B 111      39.361  57.673  92.708  1.00 81.74           C
ATOM   3764  C   GLN B 111      38.176  56.860  92.189  1.00 78.82           C
ATOM   3765  O   GLN B 111      38.253  55.639  92.087  1.00 77.88           O
ATOM   3766  CB  GLN B 111      39.070  58.085  94.155  1.00 90.62           C
ATOM   3767  CG  GLN B 111      40.177  58.884  94.838  1.00100.25           C
ATOM   3768  CD  GLN B 111      40.321  60.285  94.277  1.00105.52           C
ATOM   3769  OE1 GLN B 111      39.362  61.057  94.246  1.00108.75           O
ATOM   3770  NE2 GLN B 111      41.524  60.622  93.832  1.00107.34           N
ATOM   3771  N   ARG B 112      37.072  57.529  91.887  1.00 76.24           N
ATOM   3772  CA  ARG B 112      35.884  56.840  91.413  1.00 74.45           C
ATOM   3773  C   ARG B 112      35.926  56.489  89.933  1.00 74.18           C
ATOM   3774  O   ARG B 112      35.108  55.701  89.452  1.00 69.32           O
ATOM   3775  CB  ARG B 112      34.660  57.688  91.713  1.00 71.64           C
ATOM   3776  CG  ARG B 112      34.638  58.159  93.140  1.00 71.55           C
ATOM   3777  CD  ARG B 112      33.308  58.787  93.519  1.00 75.99           C
ATOM   3778  NE  ARG B 112      33.179  60.207  93.185  1.00 73.11           N
ATOM   3779  CZ  ARG B 112      32.985  60.693  91.962  1.00 71.80           C
ATOM   3780  NH1 ARG B 112      32.900  59.882  90.914  1.00 62.74           N
ATOM   3781  NH2 ARG B 112      32.850  62.000  91.791  1.00 74.87           N
ATOM   3782  N   PHE B 113      36.873  57.087  89.217  1.00 71.72           N
ATOM   3783  CA  PHE B 113      37.061  56.831  87.790  1.00 68.98           C
ATOM   3784  C   PHE B 113      38.549  56.697  87.486  1.00 72.92           C
ATOM   3785  O   PHE B 113      39.110  57.476  86.712  1.00 74.24           O
ATOM   3786  CB  PHE B 113      36.474  57.966  86.948  1.00 57.79           C
ATOM   3787  CG  PHE B 113      34.970  58.046  86.993  1.00 49.73           C
ATOM   3788  CD1 PHE B 113      34.178  57.101  86.341  1.00 47.07           C
ATOM   3789  CD2 PHE B 113      34.346  59.075  87.688  1.00 45.23           C
ATOM   3790  CE1 PHE B 113      32.791  57.185  86.381  1.00 45.38           C
ATOM   3791  CE2 PHE B 113      32.960  59.164  87.733  1.00 42.04           C
ATOM   3792  CZ  PHE B 113      32.181  58.214  87.074  1.00 44.56           C
ATOM   3793  N   PRO B 114      39.207  55.693  88.087  1.00 73.76           N
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ATOM   3794  CA  PRO B 114      40.638  55.464  87.873  1.00 73.60           C
ATOM   3795  C   PRO B 114      41.066  55.394  86.410  1.00 74.91           C
ATOM   3796  O   PRO B 114      42.135  55.886  86.051  1.00 77.34           O
ATOM   3797  CB  PRO B 114      40.884  54.148  88.601  1.00 71.20           C
ATOM   3798  CG  PRO B 114      39.944  54.241  89.745  1.00 67.92           C
ATOM   3799  CD  PRO B 114      38.681  54.747  89.087  1.00 71.98           C
ATOM   3800  N   HIS B 115      40.236  54.795  85.565  1.00 74.32           N
ATOM   3801  CA  HIS B 115      40.592  54.669  84.160  1.00 83.38           C
ATOM   3802  C   HIS B 115      40.058  55.806  83.284  1.00 88.29           C
ATOM   3803  O   HIS B 115      39.536  55.562  82.193  1.00 93.80           O
ATOM   3804  CB  HIS B 115      40.110  53.314  83.631  1.00 84.54           C
ATOM   3805  CG  HIS B 115      40.512  52.154  84.492  1.00 85.82           C
ATOM   3806  ND1 HIS B 115      41.818  51.916  84.865  1.00 85.46           N
ATOM   3807  CD2 HIS B 115      39.776  51.162  85.049  1.00 86.92           C
ATOM   3808  CE1 HIS B 115      41.869  50.830  85.614  1.00 84.63           C
ATOM   3809  NE2 HIS B 115      40.644  50.354  85.740  1.00 86.43           N
ATOM   3810  N   GLY B 116      40.211  57.044  83.752  1.00 89.99           N
ATOM   3811  CA  GLY B 116      39.733  58.184  82.989  1.00 93.41           C
ATOM   3812  C   GLY B 116      38.393  57.817  82.393  1.00 94.87           C
ATOM   3813  O   GLY B 116      37.605  57.146  83.043  1.00 97.79           O
ATOM   3814  N   ILE B 117      38.130  58.232  81.162  1.00 93.63           N
ATOM   3815  CA  ILE B 117      36.866  57.899  80.510  1.00 86.58           C
ATOM   3816  C   ILE B 117      37.137  56.944  79.359  1.00 85.63           C
ATOM   3817  O   ILE B 117      36.879  55.751  79.464  1.00 84.99           O
ATOM   3818  CB  ILE B 117      36.159  59.165  79.968  1.00 81.68           C
ATOM   3819  CG1 ILE B 117      35.758  60.075  81.137  1.00 81.37           C
ATOM   3820  CG2 ILE B 117      34.945  58.779  79.133  1.00 76.81           C
ATOM   3821  CD1 ILE B 117      34.826  59.437  82.146  1.00 63.59           C
ATOM   3822  N   ARG B 118      37.672  57.489  78.272  1.00 84.43           N
ATOM   3823  CA  ARG B 118      38.013  56.735  77.076  1.00 90.21           C
ATOM   3824  C   ARG B 118      37.834  55.219  77.175  1.00 91.62           C
ATOM   3825  O   ARG B 118      37.005  54.643  76.471  1.00 95.51           O
ATOM   3826  CB  ARG B 118      39.455  57.038  76.681  1.00 94.90           C
ATOM   3827  CG  ARG B 118      39.860  56.372  75.396  1.00109.87           C
ATOM   3828  CD  ARG B 118      38.921  56.792  74.285  1.00123.26           C
ATOM   3829  NE  ARG B 118      39.258  56.170  73.011  1.00139.42           N
ATOM   3830  CZ  ARG B 118      38.651  56.449  71.861  1.00148.72           C
ATOM   3831  NH1 ARG B 118      37.670  57.343  71.826  1.00154.54           N
ATOM   3832  NH2 ARG B 118      39.025  55.839  70.741  1.00155.19           N
ATOM   3833  N   GLN B 119      38.628  54.583  78.039  1.00 91.20           N
ATOM   3834  CA  GLN B 119      38.598  53.129  78.246  1.00 87.63           C
ATOM   3835  C   GLN B 119      37.222  52.592  78.539  1.00 84.54           C
ATOM   3836  O   GLN B 119      36.816  51.558  78.004  1.00 84.72           O
ATOM   3837  CB  GLN B 119      39.511  52.740  79.395  1.00 87.85           C
ATOM   3838  CG  GLN B 119      40.964  52.985  79.120  1.00 96.11           C
ATOM   3839  CD  GLN B 119      41.731  53.239  80.387  1.00102.76           C
ATOM   3840  OE1 GLN B 119      41.706  52.427  81.314  1.00108.19           O
ATOM   3841  NE2 GLN B 119      42.420  54.374  80.442  1.00107.82           N
ATOM   3842  N   LEU B 120      36.523  53.287  79.425  1.00 81.03           N
ATOM   3843  CA  LEU B 120      35.172  52.909  79.798  1.00 81.16           C
ATOM   3844  C   LEU B 120      34.296  52.969  78.551  1.00 79.11           C
ATOM   3845  O   LEU B 120      33.442  52.109  78.337  1.00 80.20           O
ATOM   3846  CB  LEU B 120      34.636  53.870  80.860  1.00 82.48           C
ATOM   3847  CG  LEU B 120      33.250  53.540  81.410  1.00 82.24           C
ATOM   3848  CD1 LEU B 120      33.240  52.126  81.954  1.00 88.20           C
ATOM   3849  CD2 LEU B 120      32.891  54.525  82.493  1.00 86.14           C
ATOM   3850  N   ALA B 121      34.524  53.992  77.731  1.00 74.63           N
ATOM   3851  CA  ALA B 121      33.773  54.175  76.495  1.00 73.56           C
ATOM   3852  C   ALA B 121      34.026  52.990  75.566  1.00 77.77           C
ATOM   3853  O   ALA B 121      33.161  52.612  74.778  1.00 75.40           O
ATOM   3854  CB  ALA B 121      34.188  55.472  75.821  1.00 67.34           C
ATOM   3855  N   ASN B 122      35.217  52.405  75.667  1.00 80.26           N
ATOM   3856  CA  ASN B 122      35.573  51.254  74.848  1.00 74.20           C
ATOM   3857  C   ASN B 122      34.767  50.051  75.302  1.00 69.74           C
ATOM   3858  O   ASN B 122      34.318  49.246  74.487  1.00 60.92           O
ATOM   3859  CB  ASN B 122      37.058  50.948  74.977  1.00 73.48           C
ATOM   3860  CG  ASN B 122      37.916  52.101  74.539  1.00 70.43           C
ATOM   3861  OD1 ASN B 122      37.750  52.625  73.440  1.00 66.39           O
ATOM   3862  ND2 ASN B 122      38.840  52.511  75.397  1.00 77.29           N
ATOM   3863  N   TYR B 123      34.594  49.926  76.614  1.00 62.16           N
ATOM   3864  CA  TYR B 123      33.814  48.825  77.163  1.00 60.68           C
ATOM   3865  C   TYR B 123      32.346  49.059  76.814  1.00 57.45           C
ATOM   3866  O   TYR B 123      31.596  48.121  76.532  1.00 65.68           O
ATOM   3867  CB  TYR B 123      33.993  48.738  78.685  1.00 62.55           C
ATOM   3868  CG  TYR B 123      33.158  47.648  79.333  1.00 75.95           C
ATOM   3869  CD1 TYR B 123      32.736  46.533  78.596  1.00 84.78           C
ATOM   3870  CD2 TYR B 123      32.787  47.725  80.678  1.00 76.33           C
ATOM   3871  CE1 TYR B 123      31.959  45.526  79.174  1.00 88.63           C
ATOM   3872  CE2 TYR B 123      32.011  46.717  81.272  1.00 84.64           C
ATOM   3873  CZ  TYR B 123      31.599  45.622  80.512  1.00 90.58           C
ATOM   3874  OH  TYR B 123      30.823  44.629  81.079  1.00 91.09           O
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ATOM   3875  N   VAL B 124      31.945  50.325  76.835  1.00 47.96           N
ATOM   3876  CA  VAL B 124      30.579  50.702  76.495  1.00 40.47           C
ATOM   3877  C   VAL B 124      30.385  50.405  75.022  1.00 36.98           C
ATOM   3878  O   VAL B 124      29.422  49.741  74.635  1.00 32.23           O
ATOM   3879  CB  VAL B 124      30.333  52.209  76.725  1.00 41.05           C
ATOM   3880  CG1 VAL B 124      28.959  52.603  76.192  1.00 57.93           C
ATOM   3881  CG2 VAL B 124      30.449  52.535  78.211  1.00 38.22           C
ATOM   3882  N   HIS B 125      31.317  50.904  74.213  1.00 37.79           N
ATOM   3883  CA  HIS B 125      31.289  50.699  72.770  1.00 44.03           C
ATOM   3884  C   HIS B 125      31.390  49.215  72.427  1.00 49.90           C
ATOM   3885  O   HIS B 125      30.774  48.750  71.466  1.00 49.08           O
ATOM   3886  CB  HIS B 125      32.437  51.468  72.123  1.00 51.70           C
ATOM   3887  CG  HIS B 125      32.200  52.941  72.049  1.00 58.07           C
ATOM   3888  ND1 HIS B 125      31.181  53.488  71.301  1.00 67.26           N
ATOM   3889  CD2 HIS B 125      32.852  53.983  72.617  1.00 54.50           C
ATOM   3890  CE1 HIS B 125      31.216  54.805  71.410  1.00 63.10           C
ATOM   3891  NE2 HIS B 125      32.221  55.131  72.203  1.00 53.80           N
ATOM   3892  N   SER B 126      32.173  48.488  73.224  1.00 53.77           N
ATOM   3893  CA  SER B 126      32.365  47.058  73.033  1.00 53.79           C
ATOM   3894  C   SER B 126      31.012  46.368  73.086  1.00 50.23           C
ATOM   3895  O   SER B 126      30.654  45.625  72.177  1.00 48.90           O
ATOM   3896  CB  SER B 126      33.344  46.506  74.071  1.00 55.88           C
ATOM   3897  OG  SER B 126      33.593  45.128  73.854  1.00 60.00           O
ATOM   3898  N   LYS B 127      30.259  46.621  74.152  1.00 48.17           N
ATOM   3899  CA  LYS B 127      28.936  46.022  74.326  1.00 43.19           C
ATOM   3900  C   LYS B 127      27.983  46.468  73.215  1.00 41.85           C
ATOM   3901  O   LYS B 127      26.850  45.981  73.122  1.00 42.05           O
ATOM   3902  CB  LYS B 127      28.363  46.395  75.706  1.00 40.95           C
ATOM   3903  CG  LYS B 127      29.061  45.730  76.897  1.00 52.33           C
ATOM   3904  CD  LYS B 127      28.661  44.257  77.061  1.00 62.13           C
ATOM   3905  CE  LYS B 127      29.138  43.369  75.907  1.00 70.05           C
ATOM   3906  NZ  LYS B 127      28.684  41.956  76.050  1.00 77.94           N
ATOM   3907  N   GLY B 128      28.455  47.379  72.364  1.00 40.27           N
ATOM   3908  CA  GLY B 128      27.620  47.865  71.280  1.00 40.59           C
ATOM   3909  C   GLY B 128      26.784  49.080  71.644  1.00 40.05           C
ATOM   3910  O   GLY B 128      25.936  49.520  70.860  1.00 36.76           O
ATOM   3911  N   LEU B 129      27.022  49.633  72.829  1.00 37.74           N
ATOM   3912  CA  LEU B 129      26.267  50.795  73.275  1.00 37.57           C
ATOM   3913  C   LEU B 129      26.992  52.101  73.030  1.00 40.12           C
ATOM   3914  O   LEU B 129      28.150  52.119  72.608  1.00 42.48           O
ATOM   3915  CB  LEU B 129      25.947  50.663  74.752  1.00 39.84           C
ATOM   3916  CG  LEU B 129      25.336  49.290  75.001  1.00 48.99           C
ATOM   3917  CD1 LEU B 129      25.295  48.994  76.497  1.00 57.24           C
ATOM   3918  CD2 LEU B 129      23.953  49.241  74.365  1.00 51.52           C
ATOM   3919  N   LYS B 130      26.289  53.195  73.296  1.00 42.18           N
ATOM   3920  CA  LYS B 130      26.840  54.526  73.117  1.00 44.52           C
ATOM   3921  C   LYS B 130      26.832  55.227  74.471  1.00 43.45           C
ATOM   3922  O   LYS B 130      25.874  55.112  75.241  1.00 45.86           O
ATOM   3923  CB  LYS B 130      26.014  55.290  72.071  1.00 48.00           C
ATOM   3924  CG  LYS B 130      25.843  54.502  70.758  1.00 57.40           C
ATOM   3925  CD  LYS B 130      25.623  55.398  69.539  1.00 60.91           C
ATOM   3926  CE  LYS B 130      25.521  54.589  68.242  1.00 69.51           C
ATOM   3927  NZ  LYS B 130      26.745  53.785  67.943  1.00 75.65           N
ATOM   3928  N   LEU B 131      27.919  55.934  74.763  1.00 38.94           N
ATOM   3929  CA  LEU B 131      28.068  56.641  76.033  1.00 35.19           C
ATOM   3930  C   LEU B 131      27.713  58.119  75.977  1.00 35.30           C
ATOM   3931  O   LEU B 131      27.893  58.783  74.950  1.00 34.57           O
ATOM   3932  CB  LEU B 131      29.503  56.511  76.545  1.00 34.64           C
ATOM   3933  CG  LEU B 131      29.895  57.534  77.617  1.00 35.78           C
ATOM   3934  CD1 LEU B 131      29.198  57.191  78.928  1.00 40.68           C
ATOM   3935  CD2 LEU B 131      31.411  57.551  77.794  1.00 40.94           C
ATOM   3936  N   GLY B 132      27.226  58.620  77.110  1.00 32.17           N
ATOM   3937  CA  GLY B 132      26.850  60.015  77.225  1.00 34.16           C
ATOM   3938  C   GLY B 132      27.376  60.621  78.511  1.00 32.84           C
ATOM   3939  O   GLY B 132      27.355  59.989  79.565  1.00 25.66           O
ATOM   3940  N   ILE B 133      27.829  61.863  78.433  1.00 32.91           N
ATOM   3941  CA  ILE B 133      28.370  62.520  79.601  1.00 35.91           C
ATOM   3942  C   ILE B 133      27.638  63.813  79.908  1.00 36.56           C
ATOM   3943  O   ILE B 133      27.031  64.414  79.037  1.00 34.58           O
ATOM   3944  CB  ILE B 133      29.850  62.811  79.386  1.00 38.58           C
ATOM   3945  CG1 ILE B 133      30.493  63.256  80.700  1.00 34.22           C
ATOM   3946  CG2 ILE B 133      30.012  63.829  78.269  1.00 39.58           C
ATOM   3947  CD1 ILE B 133      30.528  62.165  81.763  1.00 29.09           C
ATOM   3948  N   TYR B 134      27.715  64.236  81.158  1.00 39.58           N
ATOM   3949  CA  TYR B 134      27.060  65.449  81.634  1.00 40.75           C
ATOM   3950  C   TYR B 134      28.064  66.602  81.702  1.00 44.66           C
ATOM   3951  O   TYR B 134      29.239  66.384  81.981  1.00 47.96           O
ATOM   3952  CB  TYR B 134      26.476  65.159  83.021  1.00 42.20           C
ATOM   3953  CG  TYR B 134      25.949  66.352  83.771  1.00 40.59           C
ATOM   3954  CD1 TYR B 134      24.587  66.497  84.019  1.00 48.82           C
ATOM   3955  CD2 TYR B 134      26.816  67.317  84.271  1.00 42.81           C
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ATOM   3956  CE1 TYR B 134      24.105  67.572  84.754  1.00 54.88           C
ATOM   3957  CE2 TYR B 134      26.349  68.392  85.000  1.00 53.26           C
ATOM   3958  CZ  TYR B 134      24.995  68.517  85.242  1.00 55.73           C
ATOM   3959  OH  TYR B 134      24.547  69.590  85.983  1.00 63.04           O
ATOM   3960  N   ALA B 135      27.606  67.824  81.450  1.00 50.40           N
ATOM   3961  CA  ALA B 135      28.483  68.994  81.505  1.00 53.10           C
ATOM   3962  C   ALA B 135      27.645  70.196  81.863  1.00 50.94           C
ATOM   3963  O   ALA B 135      26.420  70.109  81.852  1.00 52.75           O
ATOM   3964  CB  ALA B 135      29.150  69.216  80.166  1.00 56.05           C
ATOM   3965  N   ASP B 136      28.286  71.317  82.182  1.00 47.58           N
ATOM   3966  CA  ASP B 136      27.517  72.514  82.516  1.00 51.44           C
ATOM   3967  C   ASP B 136      28.057  73.772  81.870  1.00 50.71           C
ATOM   3968  O   ASP B 136      29.253  74.053  81.926  1.00 52.19           O
ATOM   3969  CB  ASP B 136      27.439  72.738  84.023  1.00 53.41           C
ATOM   3970  CG  ASP B 136      26.253  73.613  84.417  1.00 54.28           C
ATOM   3971  OD1 ASP B 136      26.169  74.774  83.953  1.00 49.26           O
ATOM   3972  OD2 ASP B 136      25.403  73.128  85.194  1.00 57.23           O
ATOM   3973  N   VAL B 137      27.140  74.538  81.285  1.00 50.15           N
ATOM   3974  CA  VAL B 137      27.462  75.772  80.570  1.00 53.39           C
ATOM   3975  C   VAL B 137      28.094  76.859  81.424  1.00 57.91           C
ATOM   3976  O   VAL B 137      28.979  77.579  80.958  1.00 56.13           O
ATOM   3977  CB  VAL B 137      26.203  76.369  79.905  1.00 50.32           C
ATOM   3978  CG1 VAL B 137      25.276  76.941  80.992  1.00 49.20           C
ATOM   3979  CG2 VAL B 137      26.602  77.423  78.899  1.00 46.21           C
ATOM   3980  N   GLY B 138      27.636  76.974  82.665  1.00 60.72           N
ATOM   3981  CA  GLY B 138      28.157  77.997  83.548  1.00 68.11           C
ATOM   3982  C   GLY B 138      29.502  77.752  84.198  1.00 75.30           C
ATOM   3983  O   GLY B 138      30.329  76.994  83.696  1.00 81.96           O
ATOM   3984  N   ASN B 139      29.737  78.432  85.316  1.00 76.76           N
ATOM   3985  CA  ASN B 139      30.986  78.263  86.044  1.00 76.95           C
ATOM   3986  C   ASN B 139      30.985  76.941  86.823  1.00 72.32           C
ATOM   3987  O   ASN B 139      32.049  76.426  87.180  1.00 69.26           O
ATOM   3988  CB  ASN B 139      31.247  79.471  86.970  1.00 84.95           C
ATOM   3989  CG  ASN B 139      31.905  80.641  86.235  1.00100.73           C
ATOM   3990  OD1 ASN B 139      32.837  80.436  85.454  1.00103.77           O
ATOM   3991  ND2 ASN B 139      31.443  81.863  86.494  1.00114.03           N
ATOM   3992  N   LYS B 140      29.795  76.375  87.047  1.00 66.89           N
ATOM   3993  CA  LYS B 140      29.666  75.100  87.772  1.00 58.23           C
ATOM   3994  C   LYS B 140      28.493  74.240  87.305  1.00 52.16           C
ATOM   3995  O   LYS B 140      27.529  74.744  86.725  1.00 55.77           O
ATOM   3996  CB  LYS B 140      29.487  75.337  89.270  1.00 53.93           C
ATOM   3997  CG  LYS B 140      30.731  75.673  90.030  1.00 58.96           C
ATOM   3998  CD  LYS B 140      30.379  75.977  91.473  1.00 62.89           C
ATOM   3999  CE  LYS B 140      31.574  76.508  92.230  1.00 72.22           C
ATOM   4000  NZ  LYS B 140      31.204  77.024  93.572  1.00 67.74           N
ATOM   4001  N   THR B 141      28.591  72.936  87.556  1.00 44.73           N
ATOM   4002  CA  THR B 141      27.522  72.003  87.213  1.00 40.60           C
ATOM   4003  C   THR B 141      26.572  72.238  88.380  1.00 39.67           C
ATOM   4004  O   THR B 141      26.978  72.853  89.368  1.00 37.84           O
ATOM   4005  CB  THR B 141      28.009  70.541  87.265  1.00 41.32           C
ATOM   4006  OG1 THR B 141      28.330  70.175  88.621  1.00 33.01           O
ATOM   4007  CG2 THR B 141      29.252  70.376  86.424  1.00 55.06           C
ATOM   4008  N   CYS B 142      25.323  71.788  88.293  1.00 44.64           N
ATOM   4009  CA  CYS B 142      24.431  72.027  89.419  1.00 54.48           C
ATOM   4010  C   CYS B 142      25.013  71.360  90.654  1.00 55.63           C
ATOM   4011  O   CYS B 142      24.552  71.590  91.763  1.00 57.67           O
ATOM   4012  CB  CYS B 142      23.010  71.502  89.162  1.00 64.07           C
ATOM   4013  SG  CYS B 142      22.094  72.315  87.816  1.00 82.05           S
ATOM   4014  N   ALA B 143      26.046  70.546  90.458  1.00 60.48           N
ATOM   4015  CA  ALA B 143      26.692  69.843  91.566  1.00 68.18           C
ATOM   4016  C   ALA B 143      27.738  70.688  92.290  1.00 73.02           C
ATOM   4017  O   ALA B 143      27.992  70.485  93.476  1.00 76.04           O
ATOM   4018  CB  ALA B 143      27.335  68.574  91.060  1.00 64.16           C
ATOM   4019  N   GLY B 144      28.335  71.638  91.579  1.00 75.69           N
ATOM   4020  CA  GLY B 144      29.349  72.483  92.182  1.00 75.17           C
ATOM   4021  C   GLY B 144      30.660  72.221  91.493  1.00 72.42           C
ATOM   4022  O   GLY B 144      31.612  72.984  91.612  1.00 81.53           O
ATOM   4023  N   PHE B 145      30.710  71.120  90.763  1.00 66.62           N
ATOM   4024  CA  PHE B 145      31.918  70.766  90.043  1.00 66.98           C
ATOM   4025  C   PHE B 145      32.186  71.651  88.847  1.00 66.01           C
ATOM   4026  O   PHE B 145      31.343  72.446  88.459  1.00 60.69           O
ATOM   4027  CB  PHE B 145      31.835  69.290  89.625  1.00 71.25           C
ATOM   4028  CG  PHE B 145      31.877  68.341  90.769  1.00 77.67           C
ATOM   4029  CD1 PHE B 145      33.013  68.230  91.555  1.00 80.29           C
ATOM   4030  CD2 PHE B 145      30.762  67.581  91.078  1.00 81.09           C
ATOM   4031  CE1 PHE B 145      33.041  67.351  92.626  1.00 83.24           C
ATOM   4032  CE2 PHE B 145      30.781  66.704  92.140  1.00 79.03           C
ATOM   4033  CZ  PHE B 145      31.928  66.601  92.923  1.00 82.39           C
ATOM   4034  N   PRO B 146      33.391  71.547  88.281  1.00 66.92           N
ATOM   4035  CA  PRO B 146      33.805  72.326  87.116  1.00 72.84           C
ATOM   4036  C   PRO B 146      32.679  72.710  86.171  1.00 74.18           C
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ATOM   4037  O   PRO B 146      31.763  71.937  85.950  1.00 79.02           O
ATOM   4038  CB  PRO B 146      34.812  71.406  86.450  1.00 70.20           C
ATOM   4039  CG  PRO B 146      35.519  70.851  87.622  1.00 68.37           C
ATOM   4040  CD  PRO B 146      34.427  70.561  88.640  1.00 70.17           C
ATOM   4041  N   GLY B 147      32.746  73.935  85.668  1.00 69.21           N
ATOM   4042  CA  GLY B 147      31.738  74.417  84.761  1.00 62.89           C
ATOM   4043  C   GLY B 147      32.109  74.050  83.344  1.00 62.01           C
ATOM   4044  O   GLY B 147      32.238  72.877  83.002  1.00 64.67           O
ATOM   4045  N   SER B 148      32.313  75.061  82.513  1.00 59.34           N
ATOM   4046  CA  SER B 148      32.684  74.856  81.114  1.00 60.60           C
ATOM   4047  C   SER B 148      32.804  76.228  80.474  1.00 63.91           C
ATOM   4048  O   SER B 148      33.196  76.349  79.311  1.00 60.85           O
ATOM   4049  CB  SER B 148      31.623  74.024  80.391  1.00 58.56           C
ATOM   4050  OG  SER B 148      31.821  72.637  80.589  1.00 55.66           O
ATOM   4051  N   PHE B 149      32.480  77.257  81.258  1.00 68.09           N
ATOM   4052  CA  PHE B 149      32.538  78.634  80.789  1.00 71.36           C
ATOM   4053  C   PHE B 149      33.915  78.948  80.225  1.00 71.71           C
ATOM   4054  O   PHE B 149      34.918  78.815  80.918  1.00 68.70           O
ATOM   4055  CB  PHE B 149      32.208  79.591  81.933  1.00 74.46           C
ATOM   4056  CG  PHE B 149      32.067  81.011  81.502  1.00 80.96           C
ATOM   4057  CD1 PHE B 149      31.299  81.327  80.396  1.00 83.72           C
ATOM   4058  CD2 PHE B 149      32.679  82.034  82.209  1.00 83.76           C
ATOM   4059  CE1 PHE B 149      31.148  82.644  79.989  1.00 85.06           C
ATOM   4060  CE2 PHE B 149      32.533  83.359  81.809  1.00 81.79           C
ATOM   4061  CZ  PHE B 149      31.765  83.664  80.703  1.00 83.91           C
ATOM   4062  N   GLY B 150      33.957  79.377  78.968  1.00 73.51           N
ATOM   4063  CA  GLY B 150      35.227  79.687  78.337  1.00 76.77           C
ATOM   4064  C   GLY B 150      36.113  78.455  78.280  1.00 81.69           C
ATOM   4065  O   GLY B 150      37.287  78.509  78.637  1.00 87.49           O
ATOM   4066  N   TYR B 151      35.542  77.340  77.840  1.00 82.32           N
ATOM   4067  CA  TYR B 151      36.266  76.084  77.740  1.00 78.21           C
ATOM   4068  C   TYR B 151      35.574  75.220  76.698  1.00 72.56           C
ATOM   4069  O   TYR B 151      36.126  74.218  76.234  1.00 67.01           O
ATOM   4070  CB  TYR B 151      36.246  75.347  79.079  1.00 85.01           C
ATOM   4071  CG  TYR B 151      37.105  75.933  80.175  1.00 89.11           C
ATOM   4072  CD1 TYR B 151      38.496  75.857  80.116  1.00 93.62           C
ATOM   4073  CD2 TYR B 151      36.526  76.511  81.303  1.00 91.80           C
ATOM   4074  CE1 TYR B 151      39.285  76.335  81.160  1.00 97.48           C
ATOM   4075  CE2 TYR B 151      37.308  76.991  82.347  1.00 95.25           C
ATOM   4076  CZ  TYR B 151      38.684  76.900  82.270  1.00 97.70           C
ATOM   4077  OH  TYR B 151      39.457  77.376  83.301  1.00 95.96           O
ATOM   4078  N   TYR B 152      34.358  75.623  76.340  1.00 71.16           N
ATOM   4079  CA  TYR B 152      33.533  74.908  75.365  1.00 69.56           C
ATOM   4080  C   TYR B 152      34.365  74.161  74.352  1.00 69.71           C
ATOM   4081  O   TYR B 152      34.414  72.933  74.371  1.00 71.60           O
ATOM   4082  CB  TYR B 152      32.604  75.880  74.639  1.00 68.44           C
ATOM   4083  CG  TYR B 152      31.750  76.702  75.583  1.00 64.03           C
ATOM   4084  CD1 TYR B 152      30.984  76.088  76.580  1.00 64.13           C
ATOM   4085  CD2 TYR B 152      31.719  78.095  75.494  1.00 62.52           C
ATOM   4086  CE1 TYR B 152      30.212  76.848  77.469  1.00 70.44           C
ATOM   4087  CE2 TYR B 152      30.949  78.863  76.375  1.00 66.13           C
ATOM   4088  CZ  TYR B 152      30.199  78.239  77.361  1.00 66.32           C
ATOM   4089  OH  TYR B 152      29.452  79.005  78.239  1.00 52.68           O
ATOM   4090  N   ASP B 153      35.026  74.900  73.471  1.00 70.05           N
ATOM   4091  CA  ASP B 153      35.860  74.267  72.459  1.00 77.32           C
ATOM   4092  C   ASP B 153      36.745  73.165  73.063  1.00 76.38           C
ATOM   4093  O   ASP B 153      36.656  72.005  72.654  1.00 80.52           O
ATOM   4094  CB  ASP B 153      36.724  75.317  71.752  1.00 81.72           C
ATOM   4095  CG  ASP B 153      35.897  76.312  70.953  1.00 84.14           C
ATOM   4096  OD1 ASP B 153      35.091  75.877  70.099  1.00 75.91           O
ATOM   4097  OD2 ASP B 153      36.063  77.530  71.177  1.00 92.08           O
ATOM   4098  N   ILE B 154      37.590  73.522  74.031  1.00 71.17           N
ATOM   4099  CA  ILE B 154      38.461  72.535  74.662  1.00 66.26           C
ATOM   4100  C   ILE B 154      37.667  71.296  75.040  1.00 62.46           C
ATOM   4101  O   ILE B 154      37.888  70.204  74.502  1.00 58.97           O
ATOM   4102  CB  ILE B 154      39.100  73.077  75.933  1.00 68.18           C
ATOM   4103  CG1 ILE B 154      40.058  74.212  75.590  1.00 66.88           C
ATOM   4104  CG2 ILE B 154      39.843  71.972  76.639  1.00 65.40           C
ATOM   4105  CD1 ILE B 154      40.717  74.829  76.800  1.00 64.67           C
ATOM   4106  N   ASP B 155      36.739  71.475  75.975  1.00 60.27           N
ATOM   4107  CA  ASP B 155      35.888  70.384  76.436  1.00 61.51           C
ATOM   4108  C   ASP B 155      35.354  69.547  75.265  1.00 56.82           C
ATOM   4109  O   ASP B 155      35.524  68.328  75.223  1.00 51.29           O
ATOM   4110  CB  ASP B 155      34.724  70.951  77.254  1.00 67.35           C
ATOM   4111  CG  ASP B 155      35.190  71.612  78.532  1.00 73.00           C
ATOM   4112  OD1 ASP B 155      34.337  72.135  79.280  1.00 76.43           O
ATOM   4113  OD2 ASP B 155      36.417  71.604  78.785  1.00 72.06           O
ATOM   4114  N   ALA B 156      34.717  70.206  74.308  1.00 56.69           N
ATOM   4115  CA  ALA B 156      34.183  69.499  73.162  1.00 62.83           C
ATOM   4116  C   ALA B 156      35.229  68.523  72.644  1.00 66.71           C
ATOM   4117  O   ALA B 156      35.047  67.314  72.730  1.00 70.40           O
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ATOM   4118  CB  ALA B 156      33.796  70.486  72.072  1.00 70.53           C
ATOM   4119  N   GLN B 157      36.332  69.049  72.123  1.00 69.39           N
ATOM   4120  CA  GLN B 157      37.389  68.198  71.590  1.00 69.42           C
ATOM   4121  C   GLN B 157      37.684  67.092  72.591  1.00 64.80           C
ATOM   4122  O   GLN B 157      37.807  65.922  72.224  1.00 67.28           O
ATOM   4123  CB  GLN B 157      38.660  69.011  71.326  1.00 76.41           C
ATOM   4124  CG  GLN B 157      39.356  68.627  70.038  1.00 86.50           C
ATOM   4125  CD  GLN B 157      38.481  68.880  68.826  1.00 89.81           C
ATOM   4126  OE1 GLN B 157      38.127  70.023  68.534  1.00 87.85           O
ATOM   4127  NE2 GLN B 157      38.120  67.813  68.115  1.00 87.49           N
ATOM   4128  N   THR B 158      37.792  67.470  73.859  1.00 55.40           N
ATOM   4129  CA  THR B 158      38.054  66.502  74.904  1.00 54.68           C
ATOM   4130  C   THR B 158      37.122  65.310  74.725  1.00 58.74           C
ATOM   4131  O   THR B 158      37.561  64.237  74.305  1.00 62.62           O
ATOM   4132  CB  THR B 158      37.829  67.111  76.297  1.00 50.56           C
ATOM   4133  OG1 THR B 158      38.733  68.206  76.490  1.00 55.92           O
ATOM   4134  CG2 THR B 158      38.066  66.066  77.378  1.00 46.19           C
ATOM   4135  N   PHE B 159      35.839  65.507  75.035  1.00 59.45           N
ATOM   4136  CA  PHE B 159      34.824  64.451  74.905  1.00 57.19           C
ATOM   4137  C   PHE B 159      34.946  63.760  73.552  1.00 56.03           C
ATOM   4138  O   PHE B 159      34.990  62.531  73.468  1.00 50.18           O
ATOM   4139  CB  PHE B 159      33.407  65.023  74.972  1.00 55.49           C
ATOM   4140  CG  PHE B 159      33.135  65.862  76.173  1.00 54.45           C
ATOM   4141  CD1 PHE B 159      33.154  65.308  77.440  1.00 54.51           C
ATOM   4142  CD2 PHE B 159      32.824  67.212  76.030  1.00 54.14           C
ATOM   4143  CE1 PHE B 159      32.863  66.087  78.555  1.00 54.81           C
ATOM   4144  CE2 PHE B 159      32.532  68.000  77.134  1.00 54.93           C
ATOM   4145  CZ  PHE B 159      32.551  67.439  78.403  1.00 51.81           C
ATOM   4146  N   ALA B 160      34.966  64.570  72.495  1.00 58.19           N
ATOM   4147  CA  ALA B 160      35.069  64.071  71.134  1.00 66.53           C
ATOM   4148  C   ALA B 160      36.186  63.050  71.061  1.00 73.96           C
ATOM   4149  O   ALA B 160      36.047  62.001  70.425  1.00 80.27           O
ATOM   4150  CB  ALA B 160      35.341  65.224  70.178  1.00 64.98           C
ATOM   4151  N   ASP B 161      37.295  63.372  71.716  1.00 79.36           N
ATOM   4152  CA  ASP B 161      38.449  62.491  71.751  1.00 81.74           C
ATOM   4153  C   ASP B 161      38.125  61.253  72.563  1.00 79.93           C
ATOM   4154  O   ASP B 161      38.298  60.122  72.099  1.00 76.06           O
ATOM   4155  CB  ASP B 161      39.643  63.206  72.377  1.00 87.77           C
ATOM   4156  CG  ASP B 161      40.587  63.762  71.340  1.00 94.92           C
ATOM   4157  OD1 ASP B 161      40.142  64.578  70.501  1.00 97.76           O
ATOM   4158  OD2 ASP B 161      41.776  63.375  71.362  1.00101.23           O
ATOM   4159  N   TRP B 162      37.640  61.490  73.778  1.00 78.90           N
ATOM   4160  CA  TRP B 162      37.286  60.435  74.718  1.00 77.64           C
ATOM   4161  C   TRP B 162      36.407  59.352  74.117  1.00 76.70           C
ATOM   4162  O   TRP B 162      36.345  58.234  74.634  1.00 74.99           O
ATOM   4163  CB  TRP B 162      36.585  61.043  75.924  1.00 80.13           C
ATOM   4164  CG  TRP B 162      37.501  61.751  76.849  1.00 85.52           C
ATOM   4165  CD1 TRP B 162      38.852  61.892  76.726  1.00 88.24           C
ATOM   4166  CD2 TRP B 162      37.142  62.371  78.081  1.00 84.79           C
ATOM   4167  NE1 TRP B 162      39.360  62.559  77.813  1.00 87.19           N
ATOM   4168  CE2 TRP B 162      38.330  62.865  78.662  1.00 82.08           C
ATOM   4169  CE3 TRP B 162      35.931  62.555  78.754  1.00 87.25           C
ATOM   4170  CZ2 TRP B 162      38.342  63.535  79.887  1.00 77.70           C
ATOM   4171  CZ3 TRP B 162      35.942  63.220  79.971  1.00 88.61           C
ATOM   4172  CH2 TRP B 162      37.142  63.702  80.526  1.00 80.08           C
ATOM   4173  N   GLY B 163      35.728  59.699  73.027  1.00 75.99           N
ATOM   4174  CA  GLY B 163      34.849  58.762  72.350  1.00 72.23           C
ATOM   4175  C   GLY B 163      33.404  58.855  72.810  1.00 67.68           C
ATOM   4176  O   GLY B 163      32.709  57.844  72.893  1.00 71.72           O
ATOM   4177  N   VAL B 164      32.948  60.068  73.110  1.00 59.84           N
ATOM   4178  CA  VAL B 164      31.580  60.280  73.571  1.00 54.18           C
ATOM   4179  C   VAL B 164      30.579  60.240  72.426  1.00 56.41           C
ATOM   4180  O   VAL B 164      30.911  60.513  71.265  1.00 61.84           O
ATOM   4181  CB  VAL B 164      31.426  61.630  74.278  1.00 52.19           C
ATOM   4182  CG1 VAL B 164      30.036  61.743  74.869  1.00 54.51           C
ATOM   4183  CG2 VAL B 164      32.481  61.775  75.357  1.00 57.52           C
ATOM   4184  N   ASP B 165      29.342  59.898  72.760  1.00 56.55           N
ATOM   4185  CA  ASP B 165      28.296  59.829  71.756  1.00 56.28           C
ATOM   4186  C   ASP B 165      27.177  60.794  72.079  1.00 52.94           C
ATOM   4187  O   ASP B 165      26.414  61.164  71.197  1.00 55.38           O
ATOM   4188  CB  ASP B 165      27.716  58.419  71.677  1.00 54.55           C
ATOM   4189  CG  ASP B 165      28.762  57.377  71.360  1.00 59.13           C
ATOM   4190  OD1 ASP B 165      29.424  57.484  70.301  1.00 64.14           O
ATOM   4191  OD2 ASP B 165      28.919  56.448  72.179  1.00 62.71           O
ATOM   4192  N   LEU B 166      27.082  61.211  73.335  1.00 41.96           N
ATOM   4193  CA  LEU B 166      26.011  62.115  73.726  1.00 34.65           C
ATOM   4194  C   LEU B 166      26.376  63.017  74.896  1.00 36.39           C
ATOM   4195  O   LEU B 166      27.021  62.579  75.853  1.00 34.13           O
ATOM   4196  CB  LEU B 166      24.766  61.288  74.067  1.00 36.44           C
ATOM   4197  CG  LEU B 166      23.492  61.955  74.604  1.00 40.91           C
ATOM   4198  CD1 LEU B 166      22.372  60.921  74.633  1.00 48.27           C
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ATOM   4199  CD2 LEU B 166      23.718  62.530  75.999  1.00 39.68           C
ATOM   4200  N   LEU B 167      25.939  64.275  74.822  1.00 38.87           N
ATOM   4201  CA  LEU B 167      26.211  65.256  75.878  1.00 37.54           C
ATOM   4202  C   LEU B 167      24.970  65.902  76.508  1.00 39.34           C
ATOM   4203  O   LEU B 167      24.131  66.474  75.812  1.00 34.28           O
ATOM   4204  CB  LEU B 167      27.103  66.383  75.339  1.00 39.21           C
ATOM   4205  CG  LEU B 167      27.327  67.493  76.372  1.00 43.73           C
ATOM   4206  CD1 LEU B 167      28.163  66.910  77.477  1.00 38.20           C
ATOM   4207  CD2 LEU B 167      28.017  68.711  75.769  1.00 43.30           C
ATOM   4208  N   LYS B 168      24.854  65.815  77.824  1.00 45.42           N
ATOM   4209  CA  LYS B 168      23.739  66.459  78.502  1.00 47.97           C
ATOM   4210  C   LYS B 168      24.297  67.786  78.993  1.00 48.67           C
ATOM   4211  O   LYS B 168      25.029  67.840  79.994  1.00 53.51           O
ATOM   4212  CB  LYS B 168      23.238  65.632  79.701  1.00 56.24           C
ATOM   4213  CG  LYS B 168      22.174  66.356  80.567  1.00 58.69           C
ATOM   4214  CD  LYS B 168      21.531  65.474  81.651  1.00 49.99           C
ATOM   4215  CE  LYS B 168      20.366  66.183  82.344  1.00 40.97           C
ATOM   4216  NZ  LYS B 168      19.583  65.271  83.228  1.00 32.80           N
ATOM   4217  N   PHE B 169      23.968  68.860  78.292  1.00 45.83           N
ATOM   4218  CA  PHE B 169      24.479  70.154  78.703  1.00 51.92           C
ATOM   4219  C   PHE B 169      23.537  70.897  79.656  1.00 51.04           C
ATOM   4220  O   PHE B 169      22.569  71.531  79.238  1.00 52.94           O
ATOM   4221  CB  PHE B 169      24.779  70.998  77.470  1.00 61.58           C
ATOM   4222  CG  PHE B 169      25.913  71.948  77.665  1.00 70.42           C
ATOM   4223  CD1 PHE B 169      27.112  71.500  78.199  1.00 72.62           C
ATOM   4224  CD2 PHE B 169      25.786  73.286  77.319  1.00 74.80           C
ATOM   4225  CE1 PHE B 169      28.168  72.369  78.388  1.00 75.63           C
ATOM   4226  CE2 PHE B 169      26.837  74.165  77.504  1.00 74.97           C
ATOM   4227  CZ  PHE B 169      28.033  73.706  78.040  1.00 78.45           C
ATOM   4228  N   ASP B 170      23.834  70.801  80.946  1.00 49.60           N
ATOM   4229  CA  ASP B 170      23.043  71.440  81.989  1.00 48.02           C
ATOM   4230  C   ASP B 170      23.400  72.925  82.095  1.00 47.03           C
ATOM   4231  O   ASP B 170      24.450  73.344  81.642  1.00 44.69           O
ATOM   4232  CB  ASP B 170      23.313  70.723  83.315  1.00 50.49           C
ATOM   4233  CG  ASP B 170      22.397  71.171  84.424  1.00 53.05           C
ATOM   4234  OD1 ASP B 170      21.655  72.153  84.243  1.00 51.74           O
ATOM   4235  OD2 ASP B 170      22.421  70.538  85.493  1.00 55.89           O
ATOM   4236  N   GLY B 171      22.529  73.720  82.702  1.00 48.16           N
ATOM   4237  CA  GLY B 171      22.803  75.142  82.827  1.00 52.27           C
ATOM   4238  C   GLY B 171      22.651  75.797  84.196  1.00 51.81           C
ATOM   4239  O   GLY B 171      21.801  76.667  84.401  1.00 48.95           O
ATOM   4240  N   CYS B 172      23.486  75.393  85.141  1.00 56.08           N
ATOM   4241  CA  CYS B 172      23.446  75.986  86.467  1.00 59.63           C
ATOM   4242  C   CYS B 172      24.604  76.961  86.546  1.00 65.06           C
ATOM   4243  O   CYS B 172      25.689  76.671  86.041  1.00 65.52           O
ATOM   4244  CB  CYS B 172      23.627  74.920  87.551  1.00 62.77           C
ATOM   4245  SG  CYS B 172      22.108  74.277  88.318  1.00 73.86           S
ATOM   4246  N   TYR B 173      24.374  78.119  87.154  1.00 69.24           N
ATOM   4247  CA  TYR B 173      25.440  79.102  87.330  1.00 72.13           C
ATOM   4248  C   TYR B 173      25.908  79.893  86.103  1.00 78.33           C
ATOM   4249  O   TYR B 173      26.773  79.439  85.358  1.00 79.20           O
ATOM   4250  CB  TYR B 173      26.674  78.422  87.944  1.00 68.03           C
ATOM   4251  CG  TYR B 173      26.424  77.709  89.252  1.00 71.50           C
ATOM   4252  CD1 TYR B 173      25.960  78.405  90.367  1.00 73.51           C
ATOM   4253  CD2 TYR B 173      26.663  76.345  89.380  1.00 72.27           C
ATOM   4254  CE1 TYR B 173      25.740  77.763  91.586  1.00 70.46           C
ATOM   4255  CE2 TYR B 173      26.450  75.687  90.593  1.00 70.67           C
ATOM   4256  CZ  TYR B 173      25.985  76.404  91.695  1.00 66.70           C
ATOM   4257  OH  TYR B 173      25.752  75.776  92.900  1.00 51.73           O
ATOM   4258  N   CYS B 174      25.351  81.083  85.911  1.00 85.92           N
ATOM   4259  CA  CYS B 174      25.755  81.959  84.810  1.00 97.17           C
ATOM   4260  C   CYS B 174      25.051  83.306  84.934  1.00106.31           C
ATOM   4261  O   CYS B 174      23.869  83.370  85.273  1.00100.13           O
ATOM   4262  CB  CYS B 174      25.454  81.314  83.455  1.00 93.86           C
ATOM   4263  SG  CYS B 174      23.775  80.749  83.264  1.00 93.51           S
ATOM   4264  N   ASP B 175      25.797  84.378  84.668  1.00116.19           N
ATOM   4265  CA  ASP B 175      25.282  85.746  84.761  1.00119.63           C
ATOM   4266  C   ASP B 175      23.905  85.952  84.109  1.00118.97           C
ATOM   4267  O   ASP B 175      22.871  85.756  84.752  1.00116.40           O
ATOM   4268  CB  ASP B 175      26.291  86.742  84.157  1.00119.42           C
ATOM   4269  CG  ASP B 175      27.492  87.015  85.071  1.00119.29           C
ATOM   4270  OD1 ASP B 175      27.288  87.476  86.216  1.00115.50           O
ATOM   4271  OD2 ASP B 175      28.644  86.783  84.639  1.00117.38           O
ATOM   4272  N   SER B 176      23.888  86.352  82.839  1.00119.54           N
ATOM   4273  CA  SER B 176      22.627  86.585  82.138  1.00115.27           C
ATOM   4274  C   SER B 176      22.452  85.648  80.949  1.00111.67           C
ATOM   4275  O   SER B 176      23.407  84.986  80.530  1.00109.69           O
ATOM   4276  CB  SER B 176      22.560  88.028  81.652  1.00117.63           C
ATOM   4277  OG  SER B 176      23.527  88.260  80.644  1.00114.24           O
ATOM   4278  N   LEU B 177      21.234  85.593  80.404  1.00108.85           N
ATOM   4279  CA  LEU B 177      20.963  84.721  79.261  1.00112.78           C
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ATOM   4280  C   LEU B 177      22.028  84.932  78.207  1.00114.90           C
ATOM   4281  O   LEU B 177      22.311  84.040  77.415  1.00114.82           O
ATOM   4282  CB  LEU B 177      19.586  84.996  78.653  1.00110.84           C
ATOM   4283  CG  LEU B 177      18.355  84.698  79.523  1.00110.75           C
ATOM   4284  CD1 LEU B 177      17.804  86.036  80.112  1.00112.77           C
ATOM   4285  CD2 LEU B 177      17.284  83.868  78.675  1.00107.44           C
ATOM   4286  N   GLU B 178      22.615  86.123  78.194  1.00118.09           N
ATOM   4287  CA  GLU B 178      23.688  86.406  77.253  1.00125.35           C
ATOM   4288  C   GLU B 178      24.656  85.232  77.393  1.00119.59           C
ATOM   4289  O   GLU B 178      24.777  84.407  76.489  1.00121.69           O
ATOM   4290  CB  GLU B 178      24.391  87.728  77.608  1.00138.64           C
ATOM   4291  CG  GLU B 178      23.571  88.994  77.331  1.00149.49           C
ATOM   4292  CD  GLU B 178      23.392  89.265  75.843  1.00156.28           C
ATOM   4293  OE1 GLU B 178      24.415  89.444  75.149  1.00156.37           O
ATOM   4294  OE2 GLU B 178      22.235  89.302  75.365  1.00157.99           O
ATOM   4295  N   ASN B 179      25.307  85.133  78.548  1.00109.35           N
ATOM   4296  CA  ASN B 179      26.246  84.044  78.782  1.00 97.15           C
ATOM   4297  C   ASN B 179      25.603  82.693  78.512  1.00 92.68           C
ATOM   4298  O   ASN B 179      26.241  81.798  77.950  1.00 93.11           O
ATOM   4299  CB  ASN B 179      26.768  84.102  80.209  1.00 92.23           C
ATOM   4300  CG  ASN B 179      27.451  85.412  80.512  1.00 91.53           C
ATOM   4301  OD1 ASN B 179      28.014  86.049  79.625  1.00 82.19           O
ATOM   4302  ND2 ASN B 179      27.423  85.816  81.770  1.00 96.60           N
ATOM   4303  N   LEU B 180      24.334  82.556  78.890  1.00 83.99           N
ATOM   4304  CA  LEU B 180      23.602  81.305  78.683  1.00 75.33           C
ATOM   4305  C   LEU B 180      23.391  80.998  77.197  1.00 70.94           C
ATOM   4306  O   LEU B 180      24.110  80.183  76.612  1.00 72.94           O
ATOM   4307  CB  LEU B 180      22.243  81.359  79.401  1.00 72.39           C
ATOM   4308  CG  LEU B 180      21.329  80.129  79.303  1.00 71.48           C
ATOM   4309  CD1 LEU B 180      22.003  78.938  79.950  1.00 70.99           C
ATOM   4310  CD2 LEU B 180      19.996  80.406  79.983  1.00 61.21           C
ATOM   4311  N   ALA B 181      22.403  81.654  76.597  1.00 66.42           N
ATOM   4312  CA  ALA B 181      22.092  81.447  75.192  1.00 69.48           C
ATOM   4313  C   ALA B 181      23.353  81.213  74.369  1.00 72.08           C
ATOM   4314  O   ALA B 181      23.451  80.217  73.650  1.00 69.52           O
ATOM   4315  CB  ALA B 181      21.325  82.644  74.648  1.00 69.42           C
ATOM   4316  N   ASP B 182      24.316  82.127  74.479  1.00 73.10           N
ATOM   4317  CA  ASP B 182      25.567  82.008  73.729  1.00 74.22           C
ATOM   4318  C   ASP B 182      26.276  80.696  74.026  1.00 71.67           C
ATOM   4319  O   ASP B 182      26.692  79.986  73.102  1.00 71.12           O
ATOM   4320  CB  ASP B 182      26.515  83.176  74.040  1.00 79.33           C
ATOM   4321  CG  ASP B 182      26.210  84.422  73.213  1.00 87.03           C
ATOM   4322  OD1 ASP B 182      26.068  84.300  71.976  1.00 89.64           O
ATOM   4323  OD2 ASP B 182      26.128  85.526  73.797  1.00 92.53           O
ATOM   4324  N   GLY B 183      26.415  80.387  75.316  1.00 65.63           N
ATOM   4325  CA  GLY B 183      27.071  79.157  75.725  1.00 61.42           C
ATOM   4326  C   GLY B 183      26.472  77.931  75.056  1.00 59.22           C
ATOM   4327  O   GLY B 183      27.194  77.119  74.463  1.00 52.20           O
ATOM   4328  N   TYR B 184      25.153  77.783  75.158  1.00 57.41           N
ATOM   4329  CA  TYR B 184      24.482  76.652  74.534  1.00 54.34           C
ATOM   4330  C   TYR B 184      24.820  76.682  73.058  1.00 57.82           C
ATOM   4331  O   TYR B 184      25.421  75.735  72.542  1.00 61.15           O
ATOM   4332  CB  TYR B 184      22.963  76.731  74.734  1.00 46.84           C
ATOM   4333  CG  TYR B 184      22.474  75.982  75.960  1.00 44.73           C
ATOM   4334  CD1 TYR B 184      22.541  74.592  76.023  1.00 45.99           C
ATOM   4335  CD2 TYR B 184      21.988  76.664  77.070  1.00 30.79           C
ATOM   4336  CE1 TYR B 184      22.139  73.900  77.159  1.00 41.68           C
ATOM   4337  CE2 TYR B 184      21.590  75.986  78.211  1.00 29.12           C
ATOM   4338  CZ  TYR B 184      21.668  74.601  78.255  1.00 39.41           C
ATOM   4339  OH  TYR B 184      21.292  73.927  79.406  1.00 43.60           O
ATOM   4340  N   LYS B 185      24.459  77.784  72.394  1.00 62.31           N
ATOM   4341  CA  LYS B 185      24.720  77.954  70.961  1.00 71.54           C
ATOM   4342  C   LYS B 185      26.173  77.639  70.625  1.00 71.35           C
ATOM   4343  O   LYS B 185      26.464  76.800  69.761  1.00 73.96           O
ATOM   4344  CB  LYS B 185      24.405  79.395  70.499  1.00 79.89           C
ATOM   4345  CG  LYS B 185      22.923  79.793  70.468  1.00 90.86           C
ATOM   4346  CD  LYS B 185      22.660  81.032  69.585  1.00 94.03           C
ATOM   4347  CE  LYS B 185      23.359  82.293  70.095  1.00 97.96           C
ATOM   4348  NZ  LYS B 185      23.053  83.504  69.271  1.00 98.03           N
ATOM   4349  N   HIS B 186      27.077  78.322  71.321  1.00 67.93           N
ATOM   4350  CA  HIS B 186      28.505  78.151  71.110  1.00 71.49           C
ATOM   4351  C   HIS B 186      28.894  76.678  71.129  1.00 71.96           C
ATOM   4352  O   HIS B 186      29.289  76.111  70.104  1.00 72.49           O
ATOM   4353  CB  HIS B 186      29.279  78.910  72.182  1.00 72.20           C
ATOM   4354  CG  HIS B 186      30.745  79.010  71.908  1.00 80.37           C
ATOM   4355  ND1 HIS B 186      31.620  79.620  72.777  1.00 80.25           N
ATOM   4356  CD2 HIS B 186      31.489  78.578  70.861  1.00 86.20           C
ATOM   4357  CE1 HIS B 186      32.844  79.561  72.280  1.00 88.39           C
ATOM   4358  NE2 HIS B 186      32.791  78.935  71.119  1.00 92.59           N
ATOM   4359  N   MET B 187      28.775  76.067  72.302  1.00 67.47           N
ATOM   4360  CA  MET B 187      29.100  74.656  72.475  1.00 63.47           C
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ATOM   4361  C   MET B 187      28.554  73.831  71.301  1.00 56.92           C
ATOM   4362  O   MET B 187      29.277  73.045  70.680  1.00 54.64           O
ATOM   4363  CB  MET B 187      28.515  74.164  73.811  1.00 60.48           C
ATOM   4364  CG  MET B 187      28.709  72.679  74.112  1.00 69.23           C
ATOM   4365  SD  MET B 187      30.432  72.124  74.165  1.00 77.92           S
ATOM   4366  CE  MET B 187      30.791  72.276  75.893  1.00 66.33           C
ATOM   4367  N   SER B 188      27.277  74.043  70.996  1.00 50.98           N
ATOM   4368  CA  SER B 188      26.597  73.348  69.908  1.00 46.97           C
ATOM   4369  C   SER B 188      27.472  73.286  68.668  1.00 45.49           C
ATOM   4370  O   SER B 188      27.652  72.227  68.074  1.00 36.98           O
ATOM   4371  CB  SER B 188      25.285  74.059  69.570  1.00 48.08           C
ATOM   4372  OG  SER B 188      24.556  73.339  68.598  1.00 49.12           O
ATOM   4373  N   LEU B 189      28.022  74.430  68.290  1.00 46.79           N
ATOM   4374  CA  LEU B 189      28.887  74.523  67.117  1.00 53.44           C
ATOM   4375  C   LEU B 189      30.231  73.831  67.360  1.00 50.11           C
ATOM   4376  O   LEU B 189      30.780  73.173  66.466  1.00 48.93           O
ATOM   4377  CB  LEU B 189      29.129  75.998  66.778  1.00 62.69           C
ATOM   4378  CG  LEU B 189      27.896  76.898  66.612  1.00 69.48           C
ATOM   4379  CD1 LEU B 189      28.327  78.363  66.690  1.00 69.15           C
ATOM   4380  CD2 LEU B 189      27.186  76.588  65.283  1.00 71.03           C
ATOM   4381  N   ALA B 190      30.755  74.001  68.574  1.00 43.50           N
ATOM   4382  CA  ALA B 190      32.034  73.412  68.955  1.00 46.88           C
ATOM   4383  C   ALA B 190      32.027  71.929  68.637  1.00 49.66           C
ATOM   4384  O   ALA B 190      32.967  71.398  68.049  1.00 48.69           O
ATOM   4385  CB  ALA B 190      32.285  73.630  70.440  1.00 45.92           C
ATOM   4386  N   LEU B 191      30.941  71.271  69.016  1.00 57.32           N
ATOM   4387  CA  LEU B 191      30.793  69.844  68.780  1.00 64.62           C
ATOM   4388  C   LEU B 191      30.777  69.508  67.274  1.00 68.59           C
ATOM   4389  O   LEU B 191      31.671  68.806  66.791  1.00 73.98           O
ATOM   4390  CB  LEU B 191      29.521  69.347  69.493  1.00 63.93           C
ATOM   4391  CG  LEU B 191      29.465  69.631  71.015  1.00 63.18           C
ATOM   4392  CD1 LEU B 191      28.071  69.343  71.552  1.00 66.63           C
ATOM   4393  CD2 LEU B 191      30.499  68.789  71.762  1.00 52.69           C
ATOM   4394  N   ASN B 192      29.781  70.018  66.539  1.00 76.65           N
ATOM   4395  CA  ASN B 192      29.656  69.781  65.086  1.00 86.95           C
ATOM   4396  C   ASN B 192      31.027  69.895  64.449  1.00 88.71           C
ATOM   4397  O   ASN B 192      31.365  69.184  63.497  1.00 91.35           O
ATOM   4398  CB  ASN B 192      28.704  70.814  64.439  1.00 88.88           C
ATOM   4399  CG  ASN B 192      28.620  70.686  62.906  1.00 83.62           C
ATOM   4400  OD1 ASN B 192      29.534  71.101  62.191  1.00 70.80           O
ATOM   4401  ND2 ASN B 192      27.509  70.116  62.432  1.00 82.55           N
ATOM   4402  N   ARG B 193      31.812  70.808  65.003  1.00 86.76           N
ATOM   4403  CA  ARG B 193      33.161  71.071  64.545  1.00 82.47           C
ATOM   4404  C   ARG B 193      34.081  69.885  64.814  1.00 70.87           C
ATOM   4405  O   ARG B 193      34.838  69.474  63.938  1.00 67.90           O
ATOM   4406  CB  ARG B 193      33.701  72.307  65.253  1.00 88.33           C
ATOM   4407  CG  ARG B 193      35.004  72.839  64.697  1.00 98.87           C
ATOM   4408  CD  ARG B 193      35.354  74.104  65.433  1.00112.98           C
ATOM   4409  NE  ARG B 193      34.145  74.896  65.659  1.00124.52           N
ATOM   4410  CZ  ARG B 193      34.084  75.991  66.414  1.00127.47           C
ATOM   4411  NH1 ARG B 193      35.170  76.445  67.029  1.00125.63           N
ATOM   4412  NH2 ARG B 193      32.929  76.630  66.562  1.00128.36           N
ATOM   4413  N   THR B 194      34.010  69.331  66.018  1.00 60.49           N
ATOM   4414  CA  THR B 194      34.860  68.201  66.373  1.00 56.47           C
ATOM   4415  C   THR B 194      34.764  67.077  65.358  1.00 54.18           C
ATOM   4416  O   THR B 194      35.707  66.300  65.205  1.00 56.94           O
ATOM   4417  CB  THR B 194      34.489  67.602  67.738  1.00 62.64           C
ATOM   4418  OG1 THR B 194      33.255  66.885  67.616  1.00 64.36           O
ATOM   4419  CG2 THR B 194      34.347  68.698  68.788  1.00 67.77           C
ATOM   4420  N   GLY B 195      33.626  66.973  64.679  1.00 54.96           N
ATOM   4421  CA  GLY B 195      33.473  65.924  63.690  1.00 68.23           C
ATOM   4422  C   GLY B 195      32.794  64.682  64.229  1.00 74.58           C
ATOM   4423  O   GLY B 195      32.168  63.933  63.478  1.00 79.21           O
ATOM   4424  N   ARG B 196      32.930  64.456  65.531  1.00 75.66           N
ATOM   4425  CA  ARG B 196      32.313  63.305  66.187  1.00 77.42           C
ATOM   4426  C   ARG B 196      30.795  63.529  66.182  1.00 72.79           C
ATOM   4427  O   ARG B 196      30.333  64.637  66.449  1.00 67.36           O
ATOM   4428  CB  ARG B 196      32.843  63.194  67.631  1.00 81.41           C
ATOM   4429  CG  ARG B 196      32.333  62.005  68.456  1.00 87.93           C
ATOM   4430  CD  ARG B 196      33.183  60.752  68.294  1.00 90.34           C
ATOM   4431  NE  ARG B 196      32.592  59.628  69.015  1.00 94.58           N
ATOM   4432  CZ  ARG B 196      32.916  58.353  68.824  1.00 98.29           C
ATOM   4433  NH1 ARG B 196      33.839  58.017  67.929  1.00 97.63           N
ATOM   4434  NH2 ARG B 196      32.296  57.408  69.518  1.00103.72           N
ATOM   4435  N   SER B 197      30.026  62.494  65.851  1.00 71.16           N
ATOM   4436  CA  SER B 197      28.568  62.600  65.839  1.00 69.64           C
ATOM   4437  C   SER B 197      28.089  62.511  67.289  1.00 69.02           C
ATOM   4438  O   SER B 197      28.034  61.414  67.856  1.00 71.10           O
ATOM   4439  CB  SER B 197      27.959  61.456  65.028  1.00 69.96           C
ATOM   4440  OG  SER B 197      28.501  61.421  63.725  1.00 71.61           O
ATOM   4441  N   ILE B 198      27.743  63.658  67.882  1.00 65.88           N
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ATOM   4442  CA  ILE B 198      27.299  63.712  69.279  1.00 61.80           C
ATOM   4443  C   ILE B 198      25.866  64.200  69.501  1.00 60.52           C
ATOM   4444  O   ILE B 198      25.568  65.364  69.259  1.00 60.48           O
ATOM   4445  CB  ILE B 198      28.200  64.660  70.122  1.00 60.81           C
ATOM   4446  CG1 ILE B 198      29.678  64.420  69.815  1.00 65.48           C
ATOM   4447  CG2 ILE B 198      27.946  64.427  71.614  1.00 56.41           C
ATOM   4448  CD1 ILE B 198      30.607  65.443  70.448  1.00 65.33           C
ATOM   4449  N   VAL B 199      24.979  63.330  69.973  1.00 57.43           N
ATOM   4450  CA  VAL B 199      23.618  63.769  70.260  1.00 49.81           C
ATOM   4451  C   VAL B 199      23.719  64.820  71.351  1.00 43.22           C
ATOM   4452  O   VAL B 199      24.204  64.553  72.451  1.00 41.32           O
ATOM   4453  CB  VAL B 199      22.740  62.631  70.772  1.00 52.26           C
ATOM   4454  CG1 VAL B 199      21.425  63.197  71.298  1.00 52.72           C
ATOM   4455  CG2 VAL B 199      22.493  61.636  69.648  1.00 55.82           C
ATOM   4456  N   TYR B 200      23.257  66.018  71.036  1.00 35.72           N
ATOM   4457  CA  TYR B 200      23.331  67.129  71.966  1.00 39.70           C
ATOM   4458  C   TYR B 200      21.998  67.382  72.639  1.00 42.09           C
ATOM   4459  O   TYR B 200      21.038  67.775  71.971  1.00 44.05           O
ATOM   4460  CB  TYR B 200      23.788  68.359  71.193  1.00 45.19           C
ATOM   4461  CG  TYR B 200      24.006  69.610  72.004  1.00 47.73           C
ATOM   4462  CD1 TYR B 200      24.658  69.570  73.231  1.00 54.60           C
ATOM   4463  CD2 TYR B 200      23.624  70.853  71.500  1.00 46.16           C
ATOM   4464  CE1 TYR B 200      24.929  70.743  73.939  1.00 60.84           C
ATOM   4465  CE2 TYR B 200      23.888  72.031  72.190  1.00 51.40           C
ATOM   4466  CZ  TYR B 200      24.543  71.974  73.413  1.00 59.57           C
ATOM   4467  OH  TYR B 200      24.808  73.144  74.102  1.00 58.13           O
ATOM   4468  N   SER B 201      21.944  67.147  73.954  1.00 41.10           N
ATOM   4469  CA  SER B 201      20.719  67.338  74.738  1.00 43.57           C
ATOM   4470  C   SER B 201      20.781  68.543  75.670  1.00 41.63           C
ATOM   4471  O   SER B 201      21.400  68.500  76.736  1.00 35.40           O
ATOM   4472  CB  SER B 201      20.407  66.103  75.571  1.00 46.88           C
ATOM   4473  OG  SER B 201      19.239  66.329  76.338  1.00 49.04           O
ATOM   4474  N   CYS B 202      20.089  69.600  75.267  1.00 43.09           N
ATOM   4475  CA  CYS B 202      20.062  70.849  76.002  1.00 40.52           C
ATOM   4476  C   CYS B 202      19.030  70.884  77.115  1.00 40.12           C
ATOM   4477  O   CYS B 202      18.131  70.045  77.175  1.00 45.63           O
ATOM   4478  CB  CYS B 202      19.818  71.990  75.018  1.00 39.64           C
ATOM   4479  SG  CYS B 202      20.914  71.849  73.565  1.00 56.69           S
ATOM   4480  N   GLU B 203      19.194  71.865  78.001  1.00 32.53           N
ATOM   4481  CA  GLU B 203      18.317  72.100  79.153  1.00 30.57           C
ATOM   4482  C   GLU B 203      18.027  73.604  79.110  1.00 32.05           C
ATOM   4483  O   GLU B 203      17.406  74.181  80.005  1.00 34.36           O
ATOM   4484  CB  GLU B 203      19.068  71.724  80.431  1.00 30.69           C
ATOM   4485  CG  GLU B 203      18.200  71.526  81.658  1.00 40.33           C
ATOM   4486  CD  GLU B 203      18.939  70.820  82.789  1.00 44.25           C
ATOM   4487  OE1 GLU B 203      19.292  69.630  82.637  1.00 42.33           O
ATOM   4488  OE2 GLU B 203      19.182  71.469  83.827  1.00 46.40           O
ATOM   4489  N   TRP B 204      18.498  74.207  78.021  1.00 34.86           N
ATOM   4490  CA  TRP B 204      18.369  75.628  77.732  1.00 33.77           C
ATOM   4491  C   TRP B 204      17.020  76.256  78.159  1.00 33.34           C
ATOM   4492  O   TRP B 204      16.976  77.120  79.038  1.00 32.51           O
ATOM   4493  CB  TRP B 204      18.597  75.810  76.229  1.00 36.11           C
ATOM   4494  CG  TRP B 204      18.627  77.212  75.706  1.00 43.38           C
ATOM   4495  CD1 TRP B 204      18.269  78.354  76.361  1.00 52.77           C
ATOM   4496  CD2 TRP B 204      19.020  77.613  74.379  1.00 46.69           C
ATOM   4497  NE1 TRP B 204      18.414  79.439  75.526  1.00 58.54           N
ATOM   4498  CE2 TRP B 204      18.874  79.012  74.305  1.00 53.83           C
ATOM   4499  CE3 TRP B 204      19.483  76.921  73.248  1.00 44.22           C
ATOM   4500  CZ2 TRP B 204      19.177  79.737  73.144  1.00 57.36           C
ATOM   4501  CZ3 TRP B 204      19.785  77.643  72.096  1.00 42.79           C
ATOM   4502  CH2 TRP B 204      19.630  79.037  72.055  1.00 51.56           C
ATOM   4503  N   PRO B 205      15.902  75.794  77.562  1.00 35.29           N
ATOM   4504  CA  PRO B 205      14.556  76.303  77.851  1.00 24.59           C
ATOM   4505  C   PRO B 205      14.260  76.396  79.332  1.00 20.83           C
ATOM   4506  O   PRO B 205      13.889  77.461  79.825  1.00 28.83           O
ATOM   4507  CB  PRO B 205      13.644  75.290  77.163  1.00 28.26           C
ATOM   4508  CG  PRO B 205      14.485  74.736  76.070  1.00 39.15           C
ATOM   4509  CD  PRO B 205      15.813  74.564  76.754  1.00 41.80           C
ATOM   4510  N   LEU B 206      14.382  75.264  80.025  1.00 15.54           N
ATOM   4511  CA  LEU B 206      14.127  75.196  81.457  1.00 24.00           C
ATOM   4512  C   LEU B 206      14.743  76.400  82.164  1.00 26.77           C
ATOM   4513  O   LEU B 206      14.303  76.779  83.250  1.00 19.16           O
ATOM   4514  CB  LEU B 206      14.724  73.914  82.018  1.00 35.69           C
ATOM   4515  CG  LEU B 206      14.832  73.841  83.539  1.00 49.18           C
ATOM   4516  CD1 LEU B 206      13.444  73.764  84.157  1.00 60.58           C
ATOM   4517  CD2 LEU B 206      15.662  72.632  83.925  1.00 59.26           C
ATOM   4518  N   TYR B 207      15.770  76.977  81.531  1.00 38.18           N
ATOM   4519  CA  TYR B 207      16.477  78.147  82.046  1.00 48.47           C
ATOM   4520  C   TYR B 207      16.156  79.483  81.372  1.00 58.12           C
ATOM   4521  O   TYR B 207      16.712  80.509  81.756  1.00 64.48           O
ATOM   4522  CB  TYR B 207      17.981  77.917  81.985  1.00 50.26           C
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ATOM   4523  CG  TYR B 207      18.439  76.924  83.008  1.00 54.09           C
ATOM   4524  CD1 TYR B 207      18.521  77.272  84.349  1.00 53.33           C
ATOM   4525  CD2 TYR B 207      18.748  75.618  82.645  1.00 57.56           C
ATOM   4526  CE1 TYR B 207      18.900  76.339  85.313  1.00 55.47           C
ATOM   4527  CE2 TYR B 207      19.129  74.675  83.598  1.00 56.42           C
ATOM   4528  CZ  TYR B 207      19.201  75.039  84.931  1.00 54.59           C
ATOM   4529  OH  TYR B 207      19.553  74.099  85.877  1.00 54.11           O
ATOM   4530  N   MET B 208      15.289  79.497  80.362  1.00 67.16           N
ATOM   4531  CA  MET B 208      14.937  80.774  79.736  1.00 76.35           C
ATOM   4532  C   MET B 208      13.915  81.470  80.644  1.00 81.72           C
ATOM   4533  O   MET B 208      13.966  82.692  80.809  1.00 85.11           O
ATOM   4534  CB  MET B 208      14.380  80.580  78.327  1.00 78.86           C
ATOM   4535  CG  MET B 208      15.418  80.942  77.277  1.00 78.81           C
ATOM   4536  SD  MET B 208      14.772  81.142  75.613  1.00 93.07           S
ATOM   4537  CE  MET B 208      14.251  82.885  75.607  1.00 86.49           C
ATOM   4538  N   TRP B 209      13.008  80.687  81.235  1.00 86.64           N
ATOM   4539  CA  TRP B 209      12.029  81.188  82.189  1.00 96.02           C
ATOM   4540  C   TRP B 209      12.995  81.443  83.364  1.00101.19           C
ATOM   4541  O   TRP B 209      13.911  80.672  83.551  1.00 99.10           O
ATOM   4542  CB  TRP B 209      11.041  80.043  82.612  1.00102.01           C
ATOM   4543  CG  TRP B 209      10.043  79.627  81.557  1.00107.53           C
ATOM   4544  CD1 TRP B 209       9.016  80.384  81.049  1.00109.21           C
ATOM   4545  CD2 TRP B 209      10.005  78.368  80.855  1.00107.49           C
ATOM   4546  NE1 TRP B 209       8.345  79.663  80.072  1.00107.06           N
ATOM   4547  CE2 TRP B 209       8.938  78.433  79.929  1.00105.86           C
ATOM   4548  CE3 TRP B 209      10.773  77.197  80.918  1.00104.86           C
ATOM   4549  CZ2 TRP B 209       8.625  77.374  79.067  1.00100.39           C
ATOM   4550  CZ3 TRP B 209      10.456  76.143  80.063  1.00101.89           C
ATOM   4551  CH2 TRP B 209       9.390  76.245  79.147  1.00 99.66           C
ATOM   4552  N   PRO B 210      12.826  82.510  84.153  1.00106.91           N
ATOM   4553  CA  PRO B 210      11.842  83.586  84.165  1.00114.58           C
ATOM   4554  C   PRO B 210      12.358  84.827  83.452  1.00119.07           C
ATOM   4555  O   PRO B 210      12.703  85.820  84.096  1.00120.59           O
ATOM   4556  CB  PRO B 210      11.676  83.859  85.634  1.00112.27           C
ATOM   4557  CG  PRO B 210      13.093  83.768  86.118  1.00111.13           C
ATOM   4558  CD  PRO B 210      13.587  82.522  85.420  1.00107.22           C
ATOM   4559  N   PHE B 211      12.402  84.766  82.132  1.00123.20           N
ATOM   4560  CA  PHE B 211      12.904  85.877  81.361  1.00125.20           C
ATOM   4561  C   PHE B 211      12.062  86.099  80.138  1.00121.76           C
ATOM   4562  O   PHE B 211      11.730  87.225  79.797  1.00125.34           O
ATOM   4563  CB  PHE B 211      14.348  85.590  80.957  1.00132.80           C
ATOM   4564  CG  PHE B 211      15.322  85.679  82.093  1.00141.06           C
ATOM   4565  CD1 PHE B 211      15.621  86.909  82.673  1.00143.96           C
ATOM   4566  CD2 PHE B 211      15.957  84.541  82.570  1.00143.20           C
ATOM   4567  CE1 PHE B 211      16.535  86.999  83.709  1.00147.62           C
ATOM   4568  CE2 PHE B 211      16.872  84.622  83.605  1.00144.40           C
ATOM   4569  CZ  PHE B 211      17.165  85.849  84.175  1.00147.42           C
ATOM   4570  N   GLN B 212      11.714  85.004  79.475  1.00117.65           N
ATOM   4571  CA  GLN B 212      10.895  85.060  78.262  1.00116.10           C
ATOM   4572  C   GLN B 212      10.741  83.683  77.630  1.00113.23           C
ATOM   4573  O   GLN B 212      11.690  82.898  77.603  1.00113.03           O
ATOM   4574  CB  GLN B 212      11.539  86.026  77.266  1.00122.76           C
ATOM   4575  CG  GLN B 212      13.060  86.006  77.235  1.00126.97           C
ATOM   4576  CD  GLN B 212      13.638  87.096  76.347  1.00128.58           C
ATOM   4577  OE1 GLN B 212      13.426  88.274  76.596  1.00128.76           O
ATOM   4578  NE2 GLN B 212      14.351  86.704  75.293  1.00129.44           N
ATOM   4579  N   LYS B 213       9.541  83.407  77.135  1.00111.73           N
ATOM   4580  CA  LYS B 213       9.236  82.153  76.480  1.00112.52           C
ATOM   4581  C   LYS B 213      10.253  81.991  75.330  1.00107.11           C
ATOM   4582  O   LYS B 213      10.422  82.887  74.515  1.00108.90           O
ATOM   4583  CB  LYS B 213       7.788  82.200  75.936  1.00116.60           C
ATOM   4584  CG  LYS B 213       6.727  82.629  76.979  1.00118.58           C
ATOM   4585  CD  LYS B 213       6.523  84.151  77.061  1.00115.90           C
ATOM   4586  CE  LYS B 213       5.279  84.512  77.879  1.00111.08           C
ATOM   4587  NZ  LYS B 213       5.070  85.985  78.035  1.00 99.14           N
ATOM   4588  N   PRO B 214      10.960  80.848  75.278  1.00 99.46           N
ATOM   4589  CA  PRO B 214      11.981  80.491  74.269  1.00 94.71           C
ATOM   4590  C   PRO B 214      11.711  80.423  72.754  1.00 90.00           C
ATOM   4591  O   PRO B 214      10.697  79.892  72.317  1.00 92.92           O
ATOM   4592  CB  PRO B 214      12.542  79.159  74.803  1.00 96.49           C
ATOM   4593  CG  PRO B 214      11.514  78.672  75.811  1.00 90.86           C
ATOM   4594  CD  PRO B 214      10.996  79.920  76.431  1.00 92.17           C
ATOM   4595  N   ASN B 215      12.633  80.976  71.961  1.00 82.14           N
ATOM   4596  CA  ASN B 215      12.498  80.901  70.510  1.00 73.32           C
ATOM   4597  C   ASN B 215      12.897  79.450  70.336  1.00 62.81           C
ATOM   4598  O   ASN B 215      14.078  79.119  70.282  1.00 53.18           O
ATOM   4599  CB  ASN B 215      13.502  81.826  69.779  1.00 86.68           C
ATOM   4600  CG  ASN B 215      13.275  81.883  68.254  1.00 96.59           C
ATOM   4601  OD1 ASN B 215      12.632  80.996  67.692  1.00 97.37           O
ATOM   4602  ND2 ASN B 215      13.796  82.925  67.596  1.00105.86           N
ATOM   4603  N   TYR B 216      11.894  78.580  70.342  1.00 56.91           N
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ATOM   4604  CA  TYR B 216      12.095  77.143  70.169  1.00 57.71           C
ATOM   4605  C   TYR B 216      12.577  76.824  68.756  1.00 58.93           C
ATOM   4606  O   TYR B 216      13.278  75.834  68.532  1.00 66.37           O
ATOM   4607  CB  TYR B 216      10.786  76.387  70.436  1.00 54.68           C
ATOM   4608  CG  TYR B 216      10.478  76.145  71.908  1.00 47.31           C
ATOM   4609  CD1 TYR B 216      11.306  75.331  72.695  1.00 48.30           C
ATOM   4610  CD2 TYR B 216       9.350  76.709  72.511  1.00 45.03           C
ATOM   4611  CE1 TYR B 216      11.017  75.082  74.040  1.00 38.66           C
ATOM   4612  CE2 TYR B 216       9.054  76.466  73.860  1.00 39.11           C
ATOM   4613  CZ  TYR B 216       9.893  75.650  74.615  1.00 36.71           C
ATOM   4614  OH  TYR B 216       9.606  75.397  75.945  1.00 39.39           O
ATOM   4615  N   THR B 217      12.194  77.650  67.791  1.00 58.65           N
ATOM   4616  CA  THR B 217      12.629  77.407  66.425  1.00 64.38           C
ATOM   4617  C   THR B 217      14.141  77.577  66.435  1.00 63.38           C
ATOM   4618  O   THR B 217      14.868  76.880  65.723  1.00 70.77           O
ATOM   4619  CB  THR B 217      11.998  78.419  65.456  1.00 72.29           C
ATOM   4620  OG1 THR B 217      10.586  78.492  65.704  1.00 71.64           O
ATOM   4621  CG2 THR B 217      12.225  77.985  64.015  1.00 78.78           C
ATOM   4622  N   GLU B 218      14.595  78.516  67.259  1.00 60.24           N
ATOM   4623  CA  GLU B 218      16.009  78.808  67.407  1.00 59.38           C
ATOM   4624  C   GLU B 218      16.657  77.568  67.994  1.00 53.71           C
ATOM   4625  O   GLU B 218      17.401  76.857  67.320  1.00 46.21           O
ATOM   4626  CB  GLU B 218      16.163  79.999  68.345  1.00 62.05           C
ATOM   4627  CG  GLU B 218      17.578  80.397  68.675  1.00 71.15           C
ATOM   4628  CD  GLU B 218      17.702  81.896  68.856  1.00 77.94           C
ATOM   4629  OE1 GLU B 218      17.520  82.623  67.851  1.00 79.20           O
ATOM   4630  OE2 GLU B 218      17.967  82.349  69.993  1.00 76.55           O
ATOM   4631  N   ILE B 219      16.342  77.320  69.259  1.00 49.61           N
ATOM   4632  CA  ILE B 219      16.840  76.171  70.011  1.00 41.53           C
ATOM   4633  C   ILE B 219      16.924  74.897  69.185  1.00 34.04           C
ATOM   4634  O   ILE B 219      17.939  74.208  69.199  1.00 38.58           O
ATOM   4635  CB  ILE B 219      15.922  75.870  71.204  1.00 40.80           C
ATOM   4636  CG1 ILE B 219      15.813  77.115  72.089  1.00 48.95           C
ATOM   4637  CG2 ILE B 219      16.433  74.653  71.967  1.00 35.42           C
ATOM   4638  CD1 ILE B 219      15.161  76.865  73.432  1.00 53.55           C
ATOM   4639  N   ARG B 220      15.832  74.582  68.492  1.00 25.48           N
ATOM   4640  CA  ARG B 220      15.742  73.393  67.662  1.00 31.02           C
ATOM   4641  C   ARG B 220      16.849  73.364  66.627  1.00 38.66           C
ATOM   4642  O   ARG B 220      17.166  72.310  66.083  1.00 43.62           O
ATOM   4643  CB  ARG B 220      14.380  73.329  66.964  1.00 38.15           C
ATOM   4644  CG  ARG B 220      14.388  72.450  65.737  1.00 54.45           C
ATOM   4645  CD  ARG B 220      13.016  71.956  65.382  1.00 70.29           C
ATOM   4646  NE  ARG B 220      13.095  70.576  64.916  1.00 91.96           N
ATOM   4647  CZ  ARG B 220      12.040  69.823  64.626  1.00 98.73           C
ATOM   4648  NH1 ARG B 220      10.817  70.322  64.753  1.00100.04           N
ATOM   4649  NH2 ARG B 220      12.206  68.570  64.218  1.00102.81           N
ATOM   4650  N   GLN B 221      17.428  74.524  66.340  1.00 47.73           N
ATOM   4651  CA  GLN B 221      18.513  74.597  65.368  1.00 59.37           C
ATOM   4652  C   GLN B 221      19.827  74.423  66.097  1.00 58.36           C
ATOM   4653  O   GLN B 221      20.897  74.725  65.565  1.00 63.76           O
ATOM   4654  CB  GLN B 221      18.542  75.951  64.681  1.00 68.87           C
ATOM   4655  CG  GLN B 221      17.296  76.321  63.945  1.00 83.58           C
ATOM   4656  CD  GLN B 221      17.505  77.570  63.134  1.00 91.32           C
ATOM   4657  OE1 GLN B 221      17.891  78.617  63.665  1.00 94.94           O
ATOM   4658  NE2 GLN B 221      17.261  77.471  61.836  1.00 91.81           N
ATOM   4659  N   TYR B 222      19.741  73.938  67.325  1.00 52.75           N
ATOM   4660  CA  TYR B 222      20.930  73.751  68.141  1.00 49.86           C
ATOM   4661  C   TYR B 222      20.885  72.521  69.047  1.00 51.82           C
ATOM   4662  O   TYR B 222      21.879  72.193  69.693  1.00 56.44           O
ATOM   4663  CB  TYR B 222      21.149  74.991  69.008  1.00 52.48           C
ATOM   4664  CG  TYR B 222      21.678  76.187  68.266  1.00 62.64           C
ATOM   4665  CD1 TYR B 222      22.894  76.126  67.596  1.00 67.88           C
ATOM   4666  CD2 TYR B 222      20.988  77.393  68.275  1.00 63.36           C
ATOM   4667  CE1 TYR B 222      23.415  77.230  66.960  1.00 68.70           C
ATOM   4668  CE2 TYR B 222      21.499  78.509  67.642  1.00 66.58           C
ATOM   4669  CZ  TYR B 222      22.717  78.418  66.988  1.00 65.02           C
ATOM   4670  OH  TYR B 222      23.259  79.516  66.372  1.00 63.49           O
ATOM   4671  N   CYS B 223      19.746  71.837  69.100  1.00 50.96           N
ATOM   4672  CA  CYS B 223      19.640  70.683  69.973  1.00 48.83           C
ATOM   4673  C   CYS B 223      18.857  69.531  69.418  1.00 49.05           C
ATOM   4674  O   CYS B 223      17.946  69.709  68.616  1.00 52.90           O
ATOM   4675  CB  CYS B 223      19.011  71.113  71.279  1.00 51.12           C
ATOM   4676  SG  CYS B 223      19.851  72.564  71.979  1.00 53.29           S
ATOM   4677  N   ASN B 224      19.214  68.338  69.866  1.00 45.96           N
ATOM   4678  CA  ASN B 224      18.523  67.137  69.433  1.00 44.72           C
ATOM   4679  C   ASN B 224      17.286  66.968  70.324  1.00 37.77           C
ATOM   4680  O   ASN B 224      16.319  66.280  69.974  1.00 39.98           O
ATOM   4681  CB  ASN B 224      19.478  65.956  69.528  1.00 51.18           C
ATOM   4682  CG  ASN B 224      20.587  66.052  68.520  1.00 58.33           C
ATOM   4683  OD1 ASN B 224      21.754  65.840  68.836  1.00 65.65           O
ATOM   4684  ND2 ASN B 224      20.226  66.373  67.286  1.00 56.79           N
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ATOM   4685  N   HIS B 225      17.343  67.609  71.485  1.00 31.45           N
ATOM   4686  CA  HIS B 225      16.245  67.631  72.427  1.00 33.69           C
ATOM   4687  C   HIS B 225      16.642  68.400  73.660  1.00 32.39           C
ATOM   4688  O   HIS B 225      17.776  68.344  74.121  1.00 30.58           O
ATOM   4689  CB  HIS B 225      15.721  66.235  72.763  1.00 36.06           C
ATOM   4690  CG  HIS B 225      16.774  65.182  72.887  1.00 34.13           C
ATOM   4691  ND1 HIS B 225      17.674  65.148  73.929  1.00 29.91           N
ATOM   4692  CD2 HIS B 225      17.014  64.075  72.141  1.00 33.57           C
ATOM   4693  CE1 HIS B 225      18.419  64.061  73.823  1.00 27.98           C
ATOM   4694  NE2 HIS B 225      18.039  63.393  72.749  1.00 27.97           N
ATOM   4695  N   TRP B 226      15.667  69.126  74.179  1.00 32.53           N
ATOM   4696  CA  TRP B 226      15.839  70.025  75.307  1.00 33.97           C
ATOM   4697  C   TRP B 226      14.852  69.787  76.464  1.00 38.96           C
ATOM   4698  O   TRP B 226      13.775  69.221  76.275  1.00 47.80           O
ATOM   4699  CB  TRP B 226      15.653  71.435  74.754  1.00 30.08           C
ATOM   4700  CG  TRP B 226      14.415  71.478  73.872  1.00 32.05           C
ATOM   4701  CD1 TRP B 226      13.112  71.579  74.293  1.00 32.11           C
ATOM   4702  CD2 TRP B 226      14.354  71.268  72.451  1.00 31.67           C
ATOM   4703  NE1 TRP B 226      12.251  71.438  73.226  1.00 23.57           N
ATOM   4704  CE2 TRP B 226      12.983  71.244  72.087  1.00 28.32           C
ATOM   4705  CE3 TRP B 226      15.322  71.090  71.450  1.00 39.08           C
ATOM   4706  CZ2 TRP B 226      12.557  71.053  70.768  1.00 33.66           C
ATOM   4707  CZ3 TRP B 226      14.894  70.896  70.125  1.00 50.47           C
ATOM   4708  CH2 TRP B 226      13.521  70.879  69.803  1.00 47.28           C
ATOM   4709  N   ARG B 227      15.229  70.239  77.658  1.00 31.64           N
ATOM   4710  CA  ARG B 227      14.389  70.117  78.849  1.00 35.03           C
ATOM   4711  C   ARG B 227      13.435  71.312  78.913  1.00 39.53           C
ATOM   4712  O   ARG B 227      13.776  72.405  78.461  1.00 40.49           O
ATOM   4713  CB  ARG B 227      15.259  70.096  80.106  1.00 35.87           C
ATOM   4714  CG  ARG B 227      15.897  68.764  80.394  1.00 35.40           C
ATOM   4715  CD  ARG B 227      14.850  67.753  80.848  1.00 38.85           C
ATOM   4716  NE  ARG B 227      14.285  68.071  82.155  1.00 27.21           N
ATOM   4717  CZ  ARG B 227      14.982  68.090  83.284  1.00 24.17           C
ATOM   4718  NH1 ARG B 227      16.274  67.809  83.276  1.00 23.16           N
ATOM   4719  NH2 ARG B 227      14.384  68.385  84.423  1.00 21.24           N
ATOM   4720  N   ASN B 228      12.243  71.107  79.470  1.00 39.75           N
ATOM   4721  CA  ASN B 228      11.268  72.189  79.579  1.00 37.24           C
ATOM   4722  C   ASN B 228      10.850  72.435  81.025  1.00 43.45           C
ATOM   4723  O   ASN B 228      10.843  73.587  81.472  1.00 51.94           O
ATOM   4724  CB  ASN B 228      10.008  71.900  78.745  1.00 40.38           C
ATOM   4725  CG  ASN B 228      10.285  71.836  77.249  1.00 53.86           C
ATOM   4726  OD1 ASN B 228      10.999  72.675  76.697  1.00 55.95           O
ATOM   4727  ND2 ASN B 228       9.704  70.839  76.582  1.00 65.88           N
ATOM   4728  N   PHE B 229      10.509  71.359  81.751  1.00 49.79           N
ATOM   4729  CA  PHE B 229      10.057  71.446  83.155  1.00 47.88           C
ATOM   4730  C   PHE B 229      11.022  70.869  84.201  1.00 44.13           C
ATOM   4731  O   PHE B 229      11.804  69.960  83.911  1.00 45.53           O
ATOM   4732  CB  PHE B 229       8.696  70.755  83.318  1.00 51.04           C
ATOM   4733  CG  PHE B 229       8.043  71.005  84.648  1.00 68.22           C
ATOM   4734  CD1 PHE B 229       7.596  72.281  84.986  1.00 77.87           C
ATOM   4735  CD2 PHE B 229       7.889  69.974  85.572  1.00 79.81           C
ATOM   4736  CE1 PHE B 229       7.005  72.528  86.224  1.00 86.97           C
ATOM   4737  CE2 PHE B 229       7.296  70.210  86.819  1.00 86.80           C
ATOM   4738  CZ  PHE B 229       6.856  71.486  87.143  1.00 90.80           C
ATOM   4739  N   ALA B 230      10.930  71.403  85.422  1.00 42.28           N
ATOM   4740  CA  ALA B 230      11.769  71.006  86.564  1.00 47.28           C
ATOM   4741  C   ALA B 230      12.075  69.521  86.634  1.00 50.55           C
ATOM   4742  O   ALA B 230      11.433  68.708  85.963  1.00 57.81           O
ATOM   4743  CB  ALA B 230      11.120  71.448  87.869  1.00 46.60           C
ATOM   4744  N   ASP B 231      13.053  69.164  87.461  1.00 46.30           N
ATOM   4745  CA  ASP B 231      13.424  67.762  87.602  1.00 47.24           C
ATOM   4746  C   ASP B 231      12.220  66.911  87.964  1.00 44.91           C
ATOM   4747  O   ASP B 231      11.121  67.419  88.208  1.00 46.32           O
ATOM   4748  CB  ASP B 231      14.501  67.605  88.664  1.00 56.16           C
ATOM   4749  CG  ASP B 231      15.725  68.403  88.334  1.00 61.99           C
ATOM   4750  OD1 ASP B 231      16.186  68.271  87.185  1.00 64.34           O
ATOM   4751  OD2 ASP B 231      16.221  69.159  89.195  1.00 73.15           O
ATOM   4752  N   ILE B 232      12.436  65.606  88.006  1.00 36.13           N
ATOM   4753  CA  ILE B 232      11.354  64.693  88.314  1.00 27.43           C
ATOM   4754  C   ILE B 232      11.698  63.756  89.482  1.00 27.62           C
ATOM   4755  O   ILE B 232      12.726  63.073  89.471  1.00 26.64           O
ATOM   4756  CB  ILE B 232      10.969  63.897  87.022  1.00 25.17           C
ATOM   4757  CG1 ILE B 232       9.834  62.915  87.311  1.00 17.61           C
ATOM   4758  CG2 ILE B 232      12.195  63.188  86.475  1.00 37.00           C
ATOM   4759  CD1 ILE B 232       9.209  62.355  86.047  1.00 34.79           C
ATOM   4760  N   ASP B 233      10.830  63.768  90.495  1.00 33.04           N
ATOM   4761  CA  ASP B 233      10.977  62.935  91.687  1.00 34.79           C
ATOM   4762  C   ASP B 233      10.447  61.553  91.370  1.00 30.20           C
ATOM   4763  O   ASP B 233       9.785  61.362  90.351  1.00 28.34           O
ATOM   4764  CB  ASP B 233      10.136  63.467  92.850  1.00 50.15           C
ATOM   4765  CG  ASP B 233      10.531  64.860  93.286  1.00 67.23           C
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ATOM   4766  OD1 ASP B 233      11.660  65.043  93.798  1.00 73.80           O
ATOM   4767  OD2 ASP B 233       9.697  65.777  93.116  1.00 75.06           O
ATOM   4768  N   ASP B 234      10.733  60.587  92.238  1.00 28.34           N
ATOM   4769  CA  ASP B 234      10.209  59.244  92.032  1.00 26.19           C
ATOM   4770  C   ASP B 234       8.867  59.339  92.747  1.00 24.68           C
ATOM   4771  O   ASP B 234       8.659  58.735  93.803  1.00 20.48           O
ATOM   4772  CB  ASP B 234      11.113  58.198  92.688  1.00 25.05           C
ATOM   4773  CG  ASP B 234      10.676  56.787  92.372  1.00 27.09           C
ATOM   4774  OD1 ASP B 234       9.949  56.597  91.363  1.00 31.30           O
ATOM   4775  OD2 ASP B 234      11.062  55.871  93.127  1.00 21.84           O
ATOM   4776  N   SER B 235       7.970  60.131  92.160  1.00 25.37           N
ATOM   4777  CA  SER B 235       6.661  60.390  92.743  1.00 26.92           C
ATOM   4778  C   SER B 235       5.562  60.595  91.718  1.00 28.46           C
ATOM   4779  O   SER B 235       5.818  61.008  90.589  1.00 32.06           O
ATOM   4780  CB  SER B 235       6.752  61.654  93.595  1.00 29.39           C
ATOM   4781  OG  SER B 235       7.218  62.732  92.785  1.00 23.53           O
ATOM   4782  N   TRP B 236       4.329  60.339  92.137  1.00 22.81           N
ATOM   4783  CA  TRP B 236       3.177  60.532  91.265  1.00 24.83           C
ATOM   4784  C   TRP B 236       2.977  62.036  91.038  1.00 28.40           C
ATOM   4785  O   TRP B 236       2.758  62.487  89.909  1.00 31.87           O
ATOM   4786  CB  TRP B 236       1.933  59.917  91.911  1.00 33.78           C
ATOM   4787  CG  TRP B 236       0.644  60.043  91.126  1.00 33.53           C
ATOM   4788  CD1 TRP B 236      -0.602  60.219  91.645  1.00 34.90           C
ATOM   4789  CD2 TRP B 236       0.473  59.964  89.701  1.00 28.06           C
ATOM   4790  NE1 TRP B 236      -1.540  60.256  90.640  1.00 22.72           N
ATOM   4791  CE2 TRP B 236      -0.910  60.101  89.436  1.00 24.75           C
ATOM   4792  CE3 TRP B 236       1.350  59.791  88.623  1.00 36.82           C
ATOM   4793  CZ2 TRP B 236      -1.441  60.070  88.142  1.00 24.24           C
ATOM   4794  CZ3 TRP B 236       0.824  59.760  87.329  1.00 38.70           C
ATOM   4795  CH2 TRP B 236      -0.565  59.900  87.104  1.00 28.28           C
ATOM   4796  N   LYS B 237       3.080  62.805  92.116  1.00 30.75           N
ATOM   4797  CA  LYS B 237       2.923  64.252  92.053  1.00 35.49           C
ATOM   4798  C   LYS B 237       3.789  64.840  90.948  1.00 36.92           C
ATOM   4799  O   LYS B 237       3.280  65.428  89.989  1.00 39.03           O
ATOM   4800  CB  LYS B 237       3.320  64.871  93.388  1.00 43.96           C
ATOM   4801  CG  LYS B 237       3.204  66.381  93.443  1.00 58.69           C
ATOM   4802  CD  LYS B 237       3.590  66.884  94.820  1.00 76.84           C
ATOM   4803  CE  LYS B 237       3.428  68.388  94.940  1.00 86.11           C
ATOM   4804  NZ  LYS B 237       3.684  68.844  96.338  1.00 87.61           N
ATOM   4805  N   SER B 238       5.100  64.667  91.091  1.00 38.16           N
ATOM   4806  CA  SER B 238       6.061  65.178  90.121  1.00 40.77           C
ATOM   4807  C   SER B 238       5.616  64.875  88.690  1.00 37.84           C
ATOM   4808  O   SER B 238       5.765  65.703  87.781  1.00 44.27           O
ATOM   4809  CB  SER B 238       7.437  64.566  90.376  1.00 37.16           C
ATOM   4810  OG  SER B 238       8.409  65.123  89.508  1.00 54.89           O
ATOM   4811  N   ILE B 239       5.049  63.694  88.483  1.00 27.75           N
ATOM   4812  CA  ILE B 239       4.592  63.343  87.150  1.00 28.70           C
ATOM   4813  C   ILE B 239       3.340  64.110  86.775  1.00 26.04           C
ATOM   4814  O   ILE B 239       3.253  64.682  85.684  1.00 17.63           O
ATOM   4815  CB  ILE B 239       4.349  61.829  87.021  1.00 22.63           C
ATOM   4816  CG1 ILE B 239       5.690  61.148  86.726  1.00 25.11           C
ATOM   4817  CG2 ILE B 239       3.303  61.545  85.948  1.00 11.50           C
ATOM   4818  CD1 ILE B 239       5.586  59.747  86.171  1.00 25.16           C
ATOM   4819  N   LYS B 240       2.376  64.134  87.684  1.00 31.73           N
ATOM   4820  CA  LYS B 240       1.145  64.849  87.425  1.00 41.99           C
ATOM   4821  C   LYS B 240       1.461  66.274  86.976  1.00 43.08           C
ATOM   4822  O   LYS B 240       1.015  66.704  85.908  1.00 44.26           O
ATOM   4823  CB  LYS B 240       0.289  64.859  88.683  1.00 47.78           C
ATOM   4824  CG  LYS B 240      -0.052  63.468  89.175  1.00 53.75           C
ATOM   4825  CD  LYS B 240      -0.659  63.497  90.570  1.00 53.18           C
ATOM   4826  CE  LYS B 240      -1.933  64.328  90.600  1.00 59.78           C
ATOM   4827  NZ  LYS B 240      -2.566  64.347  91.950  1.00 55.99           N
ATOM   4828  N   SER B 241       2.252  66.996  87.769  1.00 43.28           N
ATOM   4829  CA  SER B 241       2.601  68.374  87.428  1.00 46.91           C
ATOM   4830  C   SER B 241       3.186  68.483  86.026  1.00 43.14           C
ATOM   4831  O   SER B 241       2.803  69.375  85.274  1.00 49.64           O
ATOM   4832  CB  SER B 241       3.578  68.960  88.445  1.00 48.56           C
ATOM   4833  OG  SER B 241       4.779  68.217  88.500  1.00 59.61           O
ATOM   4834  N   ILE B 242       4.099  67.583  85.665  1.00 37.40           N
ATOM   4835  CA  ILE B 242       4.690  67.616  84.323  1.00 31.79           C
ATOM   4836  C   ILE B 242       3.611  67.464  83.253  1.00 31.03           C
ATOM   4837  O   ILE B 242       3.588  68.217  82.268  1.00 25.40           O
ATOM   4838  CB  ILE B 242       5.773  66.514  84.142  1.00 32.20           C
ATOM   4839  CG1 ILE B 242       7.107  67.024  84.694  1.00 39.49           C
ATOM   4840  CG2 ILE B 242       5.928  66.132  82.674  1.00 21.06           C
ATOM   4841  CD1 ILE B 242       8.265  66.077  84.492  1.00 41.24           C
ATOM   4842  N   LEU B 243       2.714  66.499  83.431  1.00 28.87           N
ATOM   4843  CA  LEU B 243       1.648  66.344  82.450  1.00 26.17           C
ATOM   4844  C   LEU B 243       0.873  67.651  82.388  1.00 23.84           C
ATOM   4845  O   LEU B 243       0.876  68.329  81.356  1.00  7.14           O
ATOM   4846  CB  LEU B 243       0.714  65.202  82.827  1.00 26.24           C
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ATOM   4847  CG  LEU B 243       1.200  63.829  82.375  1.00 21.83           C
ATOM   4848  CD1 LEU B 243       0.218  62.810  82.822  1.00 22.96           C
ATOM   4849  CD2 LEU B 243       1.325  63.778  80.866  1.00 28.88           C
ATOM   4850  N   ASP B 244       0.236  68.014  83.500  1.00 20.78           N
ATOM   4851  CA  ASP B 244      -0.542  69.248  83.558  1.00 28.25           C
ATOM   4852  C   ASP B 244       0.214  70.423  82.951  1.00 32.60           C
ATOM   4853  O   ASP B 244      -0.324  71.147  82.105  1.00 37.00           O
ATOM   4854  CB  ASP B 244      -0.942  69.550  85.001  1.00 31.66           C
ATOM   4855  CG  ASP B 244      -1.716  68.410  85.626  1.00 33.89           C
ATOM   4856  OD1 ASP B 244      -2.683  67.938  84.993  1.00 35.75           O
ATOM   4857  OD2 ASP B 244      -1.367  67.978  86.743  1.00 41.32           O
ATOM   4858  N   TRP B 245       1.462  70.603  83.372  1.00 38.51           N
ATOM   4859  CA  TRP B 245       2.288  71.679  82.845  1.00 46.62           C
ATOM   4860  C   TRP B 245       2.372  71.533  81.321  1.00 46.46           C
ATOM   4861  O   TRP B 245       2.039  72.465  80.582  1.00 49.26           O
ATOM   4862  CB  TRP B 245       3.700  71.636  83.443  1.00 61.17           C
ATOM   4863  CG  TRP B 245       4.533  72.799  83.004  1.00 88.13           C
ATOM   4864  CD1 TRP B 245       4.596  74.028  83.594  1.00 96.89           C
ATOM   4865  CD2 TRP B 245       5.329  72.883  81.813  1.00 99.28           C
ATOM   4866  NE1 TRP B 245       5.377  74.877  82.839  1.00106.39           N
ATOM   4867  CE2 TRP B 245       5.839  74.198  81.741  1.00105.58           C
ATOM   4868  CE3 TRP B 245       5.657  71.976  80.797  1.00102.70           C
ATOM   4869  CZ2 TRP B 245       6.660  74.628  80.691  1.00110.26           C
ATOM   4870  CZ3 TRP B 245       6.473  72.403  79.753  1.00103.34           C
ATOM   4871  CH2 TRP B 245       6.964  73.718  79.709  1.00110.36           C
ATOM   4872  N   THR B 246       2.812  70.371  80.844  1.00 47.19           N
ATOM   4873  CA  THR B 246       2.915  70.160  79.404  1.00 48.24           C
ATOM   4874  C   THR B 246       1.544  70.300  78.758  1.00 51.43           C
ATOM   4875  O   THR B 246       1.403  70.935  77.707  1.00 53.04           O
ATOM   4876  CB  THR B 246       3.530  68.766  79.078  1.00 45.41           C
ATOM   4877  OG1 THR B 246       4.919  68.922  78.749  1.00 51.10           O
ATOM   4878  CG2 THR B 246       2.831  68.115  77.901  1.00 42.75           C
ATOM   4879  N   SER B 247       0.535  69.725  79.406  1.00 52.71           N
ATOM   4880  CA  SER B 247      -0.835  69.780  78.901  1.00 54.33           C
ATOM   4881  C   SER B 247      -1.222  71.219  78.577  1.00 52.57           C
ATOM   4882  O   SER B 247      -1.774  71.503  77.494  1.00 46.52           O
ATOM   4883  CB  SER B 247      -1.796  69.205  79.939  1.00 58.27           C
ATOM   4884  OG  SER B 247      -3.072  69.010  79.379  1.00 68.82           O
ATOM   4885  N   PHE B 248      -0.916  72.113  79.520  1.00 52.38           N
ATOM   4886  CA  PHE B 248      -1.200  73.541  79.384  1.00 53.08           C
ATOM   4887  C   PHE B 248      -0.056  74.345  78.707  1.00 47.47           C
ATOM   4888  O   PHE B 248       0.340  75.415  79.167  1.00 48.64           O
ATOM   4889  CB  PHE B 248      -1.543  74.131  80.768  1.00 62.47           C
ATOM   4890  CG  PHE B 248      -1.604  75.640  80.797  1.00 67.88           C
ATOM   4891  CD1 PHE B 248      -2.481  76.342  79.962  1.00 77.15           C
ATOM   4892  CD2 PHE B 248      -0.741  76.361  81.617  1.00 60.79           C
ATOM   4893  CE1 PHE B 248      -2.491  77.747  79.943  1.00 78.98           C
ATOM   4894  CE2 PHE B 248      -0.741  77.757  81.608  1.00 70.08           C
ATOM   4895  CZ  PHE B 248      -1.616  78.451  80.769  1.00 78.87           C
ATOM   4896  N   ASN B 249       0.487  73.824  77.613  1.00 40.98           N
ATOM   4897  CA  ASN B 249       1.528  74.549  76.903  1.00 36.61           C
ATOM   4898  C   ASN B 249       1.728  74.118  75.475  1.00 41.21           C
ATOM   4899  O   ASN B 249       2.398  74.802  74.715  1.00 37.57           O
ATOM   4900  CB  ASN B 249       2.853  74.459  77.642  1.00 32.34           C
ATOM   4901  CG  ASN B 249       3.032  75.579  78.621  1.00 39.45           C
ATOM   4902  OD1 ASN B 249       2.839  76.741  78.280  1.00 53.83           O
ATOM   4903  ND2 ASN B 249       3.405  75.245  79.842  1.00 32.18           N
ATOM   4904  N   GLN B 250       1.138  72.990  75.106  1.00 51.49           N
ATOM   4905  CA  GLN B 250       1.268  72.473  73.748  1.00 54.53           C
ATOM   4906  C   GLN B 250       1.378  73.562  72.680  1.00 56.62           C
ATOM   4907  O   GLN B 250       2.160  73.429  71.745  1.00 58.26           O
ATOM   4908  CB  GLN B 250       0.101  71.532  73.428  1.00 52.25           C
ATOM   4909  CG  GLN B 250      -1.071  71.642  74.400  1.00 46.12           C
ATOM   4910  CD  GLN B 250      -2.072  70.521  74.223  1.00 42.95           C
ATOM   4911  OE1 GLN B 250      -1.716  69.341  74.272  1.00 41.42           O
ATOM   4912  NE2 GLN B 250      -3.333  70.883  74.014  1.00 50.95           N
ATOM   4913  N   GLU B 251       0.611  74.640  72.823  1.00 60.83           N
ATOM   4914  CA  GLU B 251       0.655  75.734  71.855  1.00 66.60           C
ATOM   4915  C   GLU B 251       2.071  75.992  71.385  1.00 66.06           C
ATOM   4916  O   GLU B 251       2.354  75.908  70.197  1.00 72.41           O
ATOM   4917  CB  GLU B 251       0.100  77.030  72.459  1.00 77.84           C
ATOM   4918  CG  GLU B 251      -1.399  77.224  72.296  1.00 87.92           C
ATOM   4919  CD  GLU B 251      -2.207  76.123  72.950  1.00 97.98           C
ATOM   4920  OE1 GLU B 251      -2.079  74.957  72.516  1.00102.31           O
ATOM   4921  OE2 GLU B 251      -2.968  76.421  73.900  1.00105.99           O
ATOM   4922  N   ARG B 252       2.962  76.287  72.326  1.00 61.86           N
ATOM   4923  CA  ARG B 252       4.354  76.595  72.005  1.00 63.12           C
ATOM   4924  C   ARG B 252       5.265  75.419  71.704  1.00 59.63           C
ATOM   4925  O   ARG B 252       6.085  75.483  70.789  1.00 65.66           O
ATOM   4926  CB  ARG B 252       5.003  77.386  73.138  1.00 70.07           C
ATOM   4927  CG  ARG B 252       4.302  78.659  73.506  1.00 82.92           C
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ATOM   4928  CD  ARG B 252       5.048  79.344  74.624  1.00 92.51           C
ATOM   4929  NE  ARG B 252       4.238  80.392  75.228  1.00106.07           N
ATOM   4930  CZ  ARG B 252       3.073  80.182  75.837  1.00111.28           C
ATOM   4931  NH1 ARG B 252       2.576  78.955  75.926  1.00112.64           N
ATOM   4932  NH2 ARG B 252       2.402  81.201  76.356  1.00118.84           N
ATOM   4933  N   ILE B 253       5.134  74.344  72.466  1.00 51.23           N
ATOM   4934  CA  ILE B 253       6.014  73.206  72.278  1.00 46.86           C
ATOM   4935  C   ILE B 253       5.591  72.105  71.322  1.00 52.26           C
ATOM   4936  O   ILE B 253       6.290  71.826  70.352  1.00 54.80           O
ATOM   4937  CB  ILE B 253       6.332  72.564  73.621  1.00 37.51           C
ATOM   4938  CG1 ILE B 253       5.037  72.266  74.368  1.00 35.63           C
ATOM   4939  CG2 ILE B 253       7.210  73.491  74.442  1.00 35.75           C
ATOM   4940  CD1 ILE B 253       5.259  71.630  75.708  1.00 50.20           C
ATOM   4941  N   VAL B 254       4.456  71.475  71.601  1.00 57.96           N
ATOM   4942  CA  VAL B 254       3.944  70.370  70.784  1.00 63.04           C
ATOM   4943  C   VAL B 254       4.249  70.475  69.294  1.00 62.84           C
ATOM   4944  O   VAL B 254       4.413  69.464  68.603  1.00 62.31           O
ATOM   4945  CB  VAL B 254       2.416  70.232  70.927  1.00 63.66           C
ATOM   4946  CG1 VAL B 254       1.709  71.199  69.963  1.00 71.38           C
ATOM   4947  CG2 VAL B 254       2.004  68.796  70.665  1.00 62.89           C
ATOM   4948  N   ASP B 255       4.326  71.711  68.815  1.00 64.03           N
ATOM   4949  CA  ASP B 255       4.576  72.011  67.413  1.00 66.53           C
ATOM   4950  C   ASP B 255       6.011  71.803  66.911  1.00 63.06           C
ATOM   4951  O   ASP B 255       6.245  71.002  66.012  1.00 65.92           O
ATOM   4952  CB  ASP B 255       4.152  73.449  67.144  1.00 76.95           C
ATOM   4953  CG  ASP B 255       3.518  73.614  65.798  1.00 84.76           C
ATOM   4954  OD1 ASP B 255       3.320  74.769  65.366  1.00 92.91           O
ATOM   4955  OD2 ASP B 255       3.210  72.578  65.180  1.00 84.06           O
ATOM   4956  N   VAL B 256       6.959  72.534  67.491  1.00 55.56           N
ATOM   4957  CA  VAL B 256       8.368  72.446  67.105  1.00 42.48           C
ATOM   4958  C   VAL B 256       8.983  71.059  67.301  1.00 41.65           C
ATOM   4959  O   VAL B 256      10.195  70.883  67.195  1.00 36.11           O
ATOM   4960  CB  VAL B 256       9.206  73.466  67.898  1.00 39.75           C
ATOM   4961  CG1 VAL B 256       8.994  74.864  67.336  1.00 46.21           C
ATOM   4962  CG2 VAL B 256       8.806  73.427  69.350  1.00 37.08           C
ATOM   4963  N   ALA B 257       8.145  70.074  67.585  1.00 45.55           N
ATOM   4964  CA  ALA B 257       8.613  68.715  67.791  1.00 46.48           C
ATOM   4965  C   ALA B 257       8.669  67.932  66.482  1.00 45.47           C
ATOM   4966  O   ALA B 257       7.769  68.024  65.651  1.00 45.44           O
ATOM   4967  CB  ALA B 257       7.704  68.014  68.766  1.00 47.89           C
ATOM   4968  N   GLY B 258       9.725  67.147  66.311  1.00 40.90           N
ATOM   4969  CA  GLY B 258       9.878  66.357  65.105  1.00 43.33           C
ATOM   4970  C   GLY B 258      11.314  65.889  64.999  1.00 47.01           C
ATOM   4971  O   GLY B 258      12.145  66.293  65.809  1.00 49.36           O
ATOM   4972  N   PRO B 259      11.646  65.045  64.013  1.00 47.91           N
ATOM   4973  CA  PRO B 259      13.002  64.527  63.818  1.00 51.95           C
ATOM   4974  C   PRO B 259      14.115  65.546  64.022  1.00 51.79           C
ATOM   4975  O   PRO B 259      14.022  66.681  63.556  1.00 51.46           O
ATOM   4976  CB  PRO B 259      12.949  64.002  62.399  1.00 51.34           C
ATOM   4977  CG  PRO B 259      11.592  63.428  62.349  1.00 52.80           C
ATOM   4978  CD  PRO B 259      10.742  64.505  62.988  1.00 48.81           C
ATOM   4979  N   GLY B 260      15.167  65.129  64.721  1.00 48.65           N
ATOM   4980  CA  GLY B 260      16.278  66.019  64.975  1.00 43.90           C
ATOM   4981  C   GLY B 260      16.125  66.724  66.306  1.00 42.81           C
ATOM   4982  O   GLY B 260      17.087  66.837  67.057  1.00 47.41           O
ATOM   4983  N   GLY B 261      14.916  67.197  66.601  1.00 37.57           N
ATOM   4984  CA  GLY B 261      14.666  67.895  67.858  1.00 40.11           C
ATOM   4985  C   GLY B 261      13.399  67.464  68.585  1.00 40.00           C
ATOM   4986  O   GLY B 261      12.316  67.446  68.004  1.00 40.66           O
ATOM   4987  N   TRP B 262      13.520  67.135  69.866  1.00 35.86           N
ATOM   4988  CA  TRP B 262      12.359  66.683  70.622  1.00 34.24           C
ATOM   4989  C   TRP B 262      12.133  67.402  71.937  1.00 31.66           C
ATOM   4990  O   TRP B 262      13.048  67.996  72.510  1.00 28.45           O
ATOM   4991  CB  TRP B 262      12.482  65.199  70.951  1.00 32.57           C
ATOM   4992  CG  TRP B 262      12.942  64.349  69.828  1.00 30.95           C
ATOM   4993  CD1 TRP B 262      14.204  63.853  69.630  1.00 31.59           C
ATOM   4994  CD2 TRP B 262      12.142  63.849  68.757  1.00 32.51           C
ATOM   4995  NE1 TRP B 262      14.231  63.069  68.506  1.00 31.69           N
ATOM   4996  CE2 TRP B 262      12.977  63.050  67.951  1.00 30.51           C
ATOM   4997  CE3 TRP B 262      10.795  63.993  68.403  1.00 37.67           C
ATOM   4998  CZ2 TRP B 262      12.507  62.399  66.806  1.00 38.08           C
ATOM   4999  CZ3 TRP B 262      10.328  63.342  67.262  1.00 36.12           C
ATOM   5000  CH2 TRP B 262      11.182  62.555  66.481  1.00 38.79           C
ATOM   5001  N   ASN B 263      10.897  67.330  72.420  1.00 27.62           N
ATOM   5002  CA  ASN B 263      10.553  67.916  73.706  1.00 29.78           C
ATOM   5003  C   ASN B 263      10.881  66.844  74.721  1.00 30.61           C
ATOM   5004  O   ASN B 263      10.416  65.707  74.587  1.00 34.51           O
ATOM   5005  CB  ASN B 263       9.070  68.252  73.766  1.00 27.54           C
ATOM   5006  CG  ASN B 263       8.796  69.689  73.400  1.00 18.61           C
ATOM   5007  OD1 ASN B 263       9.417  70.599  73.949  1.00 19.50           O
ATOM   5008  ND2 ASN B 263       7.861  69.910  72.484  1.00  3.57           N
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ATOM   5009  N   ASP B 264      11.680  67.200  75.727  1.00 29.39           N
ATOM   5010  CA  ASP B 264      12.107  66.241  76.744  1.00 33.04           C
ATOM   5011  C   ASP B 264      11.641  66.514  78.178  1.00 23.85           C
ATOM   5012  O   ASP B 264      12.137  67.425  78.838  1.00 16.32           O
ATOM   5013  CB  ASP B 264      13.635  66.115  76.658  1.00 38.21           C
ATOM   5014  CG  ASP B 264      14.274  65.627  77.941  1.00 44.50           C
ATOM   5015  OD1 ASP B 264      13.840  64.596  78.506  1.00 43.89           O
ATOM   5016  OD2 ASP B 264      15.244  66.288  78.373  1.00 44.94           O
ATOM   5017  N   PRO B 265      10.677  65.701  78.671  1.00 16.68           N
ATOM   5018  CA  PRO B 265      10.021  65.698  79.994  1.00 23.78           C
ATOM   5019  C   PRO B 265      10.999  65.414  81.123  1.00 31.97           C
ATOM   5020  O   PRO B 265      11.084  66.150  82.112  1.00 36.28           O
ATOM   5021  CB  PRO B 265       8.992  64.569  79.872  1.00 15.47           C
ATOM   5022  CG  PRO B 265       8.702  64.519  78.401  1.00 17.28           C
ATOM   5023  CD  PRO B 265      10.077  64.660  77.819  1.00 19.34           C
ATOM   5024  N   ASP B 266      11.699  64.298  80.953  1.00 31.98           N
ATOM   5025  CA  ASP B 266      12.719  63.814  81.869  1.00 32.87           C
ATOM   5026  C   ASP B 266      12.789  62.291  81.881  1.00 37.73           C
ATOM   5027  O   ASP B 266      12.058  61.599  81.153  1.00 33.38           O
ATOM   5028  CB  ASP B 266      12.514  64.327  83.295  1.00 32.08           C
ATOM   5029  CG  ASP B 266      13.831  64.658  83.963  1.00 35.35           C
ATOM   5030  OD1 ASP B 266      14.861  64.131  83.472  1.00 19.67           O
ATOM   5031  OD2 ASP B 266      13.843  65.419  84.963  1.00 48.42           O
ATOM   5032  N   MET B 267      13.680  61.777  82.718  1.00 40.95           N
ATOM   5033  CA  MET B 267      13.886  60.348  82.830  1.00 36.87           C
ATOM   5034  C   MET B 267      12.617  59.566  83.150  1.00 35.46           C
ATOM   5035  O   MET B 267      11.600  60.131  83.559  1.00 33.12           O
ATOM   5036  CB  MET B 267      14.950  60.093  83.889  1.00 33.99           C
ATOM   5037  CG  MET B 267      16.236  60.849  83.611  1.00 37.20           C
ATOM   5038  SD  MET B 267      17.220  61.194  85.089  1.00 52.40           S
ATOM   5039  CE  MET B 267      16.578  62.777  85.531  1.00 54.81           C
ATOM   5040  N   LEU B 268      12.692  58.258  82.925  1.00 28.80           N
ATOM   5041  CA  LEU B 268      11.602  57.334  83.203  1.00 20.10           C
ATOM   5042  C   LEU B 268      11.910  56.720  84.571  1.00 25.74           C
ATOM   5043  O   LEU B 268      12.890  55.985  84.730  1.00 34.41           O
ATOM   5044  CB  LEU B 268      11.537  56.234  82.134  1.00  3.31           C
ATOM   5045  CG  LEU B 268      10.921  56.641  80.795  1.00 10.00           C
ATOM   5046  CD1 LEU B 268      10.884  55.464  79.832  1.00 16.37           C
ATOM   5047  CD2 LEU B 268       9.507  57.143  81.040  1.00 11.46           C
ATOM   5048  N   VAL B 269      11.079  57.032  85.560  1.00 25.36           N
ATOM   5049  CA  VAL B 269      11.289  56.527  86.900  1.00 32.25           C
ATOM   5050  C   VAL B 269      10.592  55.199  87.161  1.00 29.26           C
ATOM   5051  O   VAL B 269      10.437  54.778  88.305  1.00 29.53           O
ATOM   5052  CB  VAL B 269      10.815  57.546  87.914  1.00 41.96           C
ATOM   5053  CG1 VAL B 269      11.434  58.895  87.600  1.00 46.38           C
ATOM   5054  CG2 VAL B 269       9.316  57.633  87.884  1.00 49.99           C
ATOM   5055  N   ILE B 270      10.164  54.545  86.091  1.00 25.36           N
ATOM   5056  CA  ILE B 270       9.500  53.247  86.186  1.00 28.24           C
ATOM   5057  C   ILE B 270      10.525  52.188  86.593  1.00 27.45           C
ATOM   5058  O   ILE B 270      11.608  52.100  86.012  1.00 31.99           O
ATOM   5059  CB  ILE B 270       8.880  52.849  84.825  1.00 30.74           C
ATOM   5060  CG1 ILE B 270       7.737  53.805  84.470  1.00 41.38           C
ATOM   5061  CG2 ILE B 270       8.381  51.429  84.873  1.00 31.73           C
ATOM   5062  CD1 ILE B 270       7.289  53.733  83.016  1.00 46.12           C
ATOM   5063  N   GLY B 271      10.192  51.382  87.592  1.00 25.49           N
ATOM   5064  CA  GLY B 271      11.124  50.355  88.022  1.00 25.99           C
ATOM   5065  C   GLY B 271      11.692  50.663  89.385  1.00 30.96           C
ATOM   5066  O   GLY B 271      12.432  49.863  89.955  1.00 32.97           O
ATOM   5067  N   ASN B 272      11.344  51.845  89.885  1.00 35.11           N
ATOM   5068  CA  ASN B 272      11.770  52.307  91.196  1.00 41.44           C
ATOM   5069  C   ASN B 272      10.708  51.959  92.227  1.00 43.88           C
ATOM   5070  O   ASN B 272      10.193  50.846  92.226  1.00 50.40           O
ATOM   5071  CB  ASN B 272      12.012  53.809  91.180  1.00 47.76           C
ATOM   5072  CG  ASN B 272      13.327  54.166  90.558  1.00 52.95           C
ATOM   5073  OD1 ASN B 272      13.674  53.664  89.489  1.00 61.78           O
ATOM   5074  ND2 ASN B 272      14.073  55.041  91.218  1.00 49.92           N
ATOM   5075  N   PHE B 273      10.345  52.914  93.077  1.00 40.92           N
ATOM   5076  CA  PHE B 273       9.374  52.644  94.130  1.00 45.10           C
ATOM   5077  C   PHE B 273       8.260  53.651  94.287  1.00 50.43           C
ATOM   5078  O   PHE B 273       7.190  53.313  94.775  1.00 55.97           O
ATOM   5079  CB  PHE B 273      10.091  52.517  95.478  1.00 48.93           C
ATOM   5080  CG  PHE B 273      11.593  52.623  95.382  1.00 50.45           C
ATOM   5081  CD1 PHE B 273      12.403  51.634  95.920  1.00 48.08           C
ATOM   5082  CD2 PHE B 273      12.198  53.698  94.728  1.00 52.55           C
ATOM   5083  CE1 PHE B 273      13.790  51.704  95.808  1.00 50.98           C
ATOM   5084  CE2 PHE B 273      13.586  53.778  94.608  1.00 61.31           C
ATOM   5085  CZ  PHE B 273      14.382  52.776  95.149  1.00 59.14           C
ATOM   5086  N   GLY B 274       8.513  54.888  93.889  1.00 46.82           N
ATOM   5087  CA  GLY B 274       7.509  55.925  94.040  1.00 35.92           C
ATOM   5088  C   GLY B 274       6.213  55.756  93.269  1.00 31.72           C
ATOM   5089  O   GLY B 274       5.185  56.352  93.633  1.00 33.90           O
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ATOM   5090  N   LEU B 275       6.239  54.941  92.218  1.00 28.97           N
ATOM   5091  CA  LEU B 275       5.038  54.744  91.419  1.00 26.12           C
ATOM   5092  C   LEU B 275       4.311  53.425  91.608  1.00 28.74           C
ATOM   5093  O   LEU B 275       4.931  52.372  91.748  1.00 31.57           O
ATOM   5094  CB  LEU B 275       5.369  54.930  89.945  1.00 26.02           C
ATOM   5095  CG  LEU B 275       5.958  56.304  89.620  1.00 23.75           C
ATOM   5096  CD1 LEU B 275       5.811  56.551  88.130  1.00 28.23           C
ATOM   5097  CD2 LEU B 275       5.231  57.396  90.414  1.00 22.80           C
ATOM   5098  N   SER B 276       2.986  53.498  91.630  1.00 28.06           N
ATOM   5099  CA  SER B 276       2.182  52.302  91.770  1.00 36.79           C
ATOM   5100  C   SER B 276       2.153  51.726  90.367  1.00 40.22           C
ATOM   5101  O   SER B 276       2.698  52.314  89.440  1.00 38.89           O
ATOM   5102  CB  SER B 276       0.766  52.652  92.181  1.00 40.24           C
ATOM   5103  OG  SER B 276       0.083  53.229  91.078  1.00 45.11           O
ATOM   5104  N   TRP B 277       1.493  50.589  90.206  1.00 43.13           N
ATOM   5105  CA  TRP B 277       1.422  49.965  88.907  1.00 39.95           C
ATOM   5106  C   TRP B 277       0.660  50.820  87.936  1.00 36.27           C
ATOM   5107  O   TRP B 277       1.149  51.135  86.845  1.00 35.96           O
ATOM   5108  CB  TRP B 277       0.732  48.612  88.972  1.00 46.97           C
ATOM   5109  CG  TRP B 277       0.617  48.018  87.607  1.00 46.70           C
ATOM   5110  CD1 TRP B 277      -0.530  47.728  86.928  1.00 46.98           C
ATOM   5111  CD2 TRP B 277       1.701  47.695  86.725  1.00 48.84           C
ATOM   5112  NE1 TRP B 277      -0.230  47.244  85.674  1.00 45.37           N
ATOM   5113  CE2 TRP B 277       1.132  47.214  85.523  1.00 48.55           C
ATOM   5114  CE3 TRP B 277       3.099  47.768  86.835  1.00 49.30           C
ATOM   5115  CZ2 TRP B 277       1.912  46.806  84.435  1.00 44.51           C
ATOM   5116  CZ3 TRP B 277       3.874  47.365  85.759  1.00 45.41           C
ATOM   5117  CH2 TRP B 277       3.276  46.889  84.570  1.00 42.60           C
ATOM   5118  N   ASN B 278      -0.556  51.177  88.314  1.00 32.20           N
ATOM   5119  CA  ASN B 278      -1.359  51.984  87.423  1.00 31.29           C
ATOM   5120  C   ASN B 278      -0.672  53.268  87.060  1.00 31.61           C
ATOM   5121  O   ASN B 278      -0.885  53.804  85.975  1.00 32.14           O
ATOM   5122  CB  ASN B 278      -2.693  52.278  88.059  1.00 36.76           C
ATOM   5123  CG  ASN B 278      -3.697  51.231  87.735  1.00 37.14           C
ATOM   5124  OD1 ASN B 278      -4.181  51.161  86.604  1.00 30.93           O
ATOM   5125  ND2 ASN B 278      -4.006  50.379  88.714  1.00 42.27           N
ATOM   5126  N   GLN B 279       0.171  53.742  87.970  1.00 32.31           N
ATOM   5127  CA  GLN B 279       0.897  54.978  87.759  1.00 31.16           C
ATOM   5128  C   GLN B 279       2.053  54.829  86.775  1.00 34.55           C
ATOM   5129  O   GLN B 279       2.360  55.757  86.035  1.00 31.95           O
ATOM   5130  CB  GLN B 279       1.390  55.506  89.099  1.00 19.15           C
ATOM   5131  CG  GLN B 279       0.288  56.135  89.909  1.00  3.31           C
ATOM   5132  CD  GLN B 279       0.619  56.185  91.367  1.00  4.33           C
ATOM   5133  OE1 GLN B 279       1.751  56.473  91.743  1.00 20.32           O
ATOM   5134  NE2 GLN B 279      -0.371  55.907  92.211  1.00  9.62           N
ATOM   5135  N   GLN B 280       2.682  53.659  86.757  1.00 35.28           N
ATOM   5136  CA  GLN B 280       3.795  53.414  85.851  1.00 28.21           C
ATOM   5137  C   GLN B 280       3.335  53.340  84.390  1.00 33.39           C
ATOM   5138  O   GLN B 280       3.913  53.998  83.513  1.00 29.04           O
ATOM   5139  CB  GLN B 280       4.517  52.119  86.232  1.00 19.60           C
ATOM   5140  CG  GLN B 280       5.061  52.098  87.637  1.00 25.07           C
ATOM   5141  CD  GLN B 280       5.960  50.915  87.897  1.00 33.96           C
ATOM   5142  OE1 GLN B 280       7.058  50.830  87.351  1.00 39.59           O
ATOM   5143  NE2 GLN B 280       5.498  49.987  88.727  1.00 35.05           N
ATOM   5144  N   VAL B 281       2.300  52.550  84.118  1.00 33.52           N
ATOM   5145  CA  VAL B 281       1.822  52.445  82.744  1.00 33.85           C
ATOM   5146  C   VAL B 281       1.543  53.841  82.219  1.00 32.53           C
ATOM   5147  O   VAL B 281       1.828  54.158  81.072  1.00 34.07           O
ATOM   5148  CB  VAL B 281       0.526  51.599  82.638  1.00 31.50           C
ATOM   5149  CG1 VAL B 281       0.697  50.324  83.426  1.00 32.91           C
ATOM   5150  CG2 VAL B 281      -0.682  52.392  83.126  1.00 33.47           C
ATOM   5151  N   THR B 282       0.992  54.677  83.086  1.00 23.34           N
ATOM   5152  CA  THR B 282       0.664  56.036  82.714  1.00 12.70           C
ATOM   5153  C   THR B 282       1.873  56.762  82.134  1.00 11.31           C
ATOM   5154  O   THR B 282       1.831  57.183  80.981  1.00 17.88           O
ATOM   5155  CB  THR B 282       0.135  56.826  83.920  1.00 15.31           C
ATOM   5156  OG1 THR B 282      -0.916  56.093  84.564  1.00 16.34           O
ATOM   5157  CG2 THR B 282      -0.406  58.160  83.465  1.00 17.32           C
ATOM   5158  N   GLN B 283       2.948  56.898  82.916  1.00  4.99           N
ATOM   5159  CA  GLN B 283       4.148  57.593  82.428  1.00 10.41           C
ATOM   5160  C   GLN B 283       4.606  57.030  81.084  1.00 13.30           C
ATOM   5161  O   GLN B 283       4.811  57.772  80.126  1.00 15.31           O
ATOM   5162  CB  GLN B 283       5.327  57.499  83.418  1.00  3.31           C
ATOM   5163  CG  GLN B 283       6.612  58.139  82.837  1.00 23.14           C
ATOM   5164  CD  GLN B 283       7.843  58.027  83.732  1.00 32.77           C
ATOM   5165  OE1 GLN B 283       8.285  56.931  84.071  1.00 34.41           O
ATOM   5166  NE2 GLN B 283       8.409  59.170  84.103  1.00 42.97           N
ATOM   5167  N   MET B 284       4.779  55.714  81.028  1.00 15.81           N
ATOM   5168  CA  MET B 284       5.194  55.055  79.803  1.00 14.55           C
ATOM   5169  C   MET B 284       4.225  55.376  78.667  1.00 11.07           C
ATOM   5170  O   MET B 284       4.640  55.794  77.596  1.00  5.42           O
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ATOM   5171  CB  MET B 284       5.238  53.546  80.022  1.00 13.69           C
ATOM   5172  CG  MET B 284       5.767  52.755  78.844  1.00  8.27           C
ATOM   5173  SD  MET B 284       7.559  52.899  78.676  1.00 21.12           S
ATOM   5174  CE  MET B 284       7.661  53.878  77.067  1.00 26.82           C
ATOM   5175  N   ALA B 285       2.934  55.171  78.899  1.00  9.54           N
ATOM   5176  CA  ALA B 285       1.936  55.446  77.878  1.00 12.00           C
ATOM   5177  C   ALA B 285       2.054  56.872  77.374  1.00 13.36           C
ATOM   5178  O   ALA B 285       2.098  57.112  76.160  1.00 17.10           O
ATOM   5179  CB  ALA B 285       0.546  55.218  78.428  1.00 23.30           C
ATOM   5180  N   LEU B 286       2.113  57.825  78.296  1.00 12.23           N
ATOM   5181  CA  LEU B 286       2.206  59.216  77.887  1.00 14.82           C
ATOM   5182  C   LEU B 286       3.544  59.671  77.306  1.00 18.25           C
ATOM   5183  O   LEU B 286       3.551  60.513  76.410  1.00 29.59           O
ATOM   5184  CB  LEU B 286       1.740  60.129  79.018  1.00 19.13           C
ATOM   5185  CG  LEU B 286       0.208  60.174  78.942  1.00 12.90           C
ATOM   5186  CD1 LEU B 286      -0.385  60.212  80.316  1.00 24.27           C
ATOM   5187  CD2 LEU B 286      -0.233  61.371  78.145  1.00  7.95           C
ATOM   5188  N   TRP B 287       4.671  59.138  77.769  1.00 16.94           N
ATOM   5189  CA  TRP B 287       5.924  59.560  77.160  1.00 25.08           C
ATOM   5190  C   TRP B 287       5.850  59.156  75.694  1.00 30.58           C
ATOM   5191  O   TRP B 287       6.353  59.855  74.810  1.00 37.20           O
ATOM   5192  CB  TRP B 287       7.121  58.894  77.812  1.00 19.43           C
ATOM   5193  CG  TRP B 287       7.782  59.744  78.855  1.00 27.34           C
ATOM   5194  CD1 TRP B 287       9.125  59.961  79.004  1.00 40.95           C
ATOM   5195  CD2 TRP B 287       7.145  60.463  79.916  1.00 20.62           C
ATOM   5196  NE1 TRP B 287       9.370  60.763  80.099  1.00 28.11           N
ATOM   5197  CE2 TRP B 287       8.173  61.080  80.681  1.00 18.44           C
ATOM   5198  CE3 TRP B 287       5.814  60.631  80.313  1.00 19.29           C
ATOM   5199  CZ2 TRP B 287       7.908  61.871  81.794  1.00 22.11           C
ATOM   5200  CZ3 TRP B 287       5.552  61.417  81.421  1.00 33.41           C
ATOM   5201  CH2 TRP B 287       6.596  62.022  82.156  1.00 28.12           C
ATOM   5202  N   ALA B 288       5.204  58.024  75.441  1.00 27.82           N
ATOM   5203  CA  ALA B 288       5.043  57.531  74.084  1.00 26.69           C
ATOM   5204  C   ALA B 288       4.188  58.509  73.293  1.00 25.25           C
ATOM   5205  O   ALA B 288       4.467  58.794  72.124  1.00 19.52           O
ATOM   5206  CB  ALA B 288       4.388  56.167  74.104  1.00 33.43           C
ATOM   5207  N   ILE B 289       3.142  59.025  73.934  1.00 20.43           N
ATOM   5208  CA  ILE B 289       2.258  59.975  73.266  1.00 23.46           C
ATOM   5209  C   ILE B 289       3.002  61.256  72.960  1.00 30.21           C
ATOM   5210  O   ILE B 289       2.797  61.857  71.907  1.00 39.56           O
ATOM   5211  CB  ILE B 289       1.039  60.348  74.125  1.00 20.26           C
ATOM   5212  CG1 ILE B 289       0.093  59.150  74.233  1.00 21.33           C
ATOM   5213  CG2 ILE B 289       0.305  61.528  73.488  1.00 17.24           C
ATOM   5214  CD1 ILE B 289      -0.599  58.824  72.916  1.00 16.19           C
ATOM   5215  N   MET B 290       3.871  61.667  73.882  1.00 23.96           N
ATOM   5216  CA  MET B 290       4.628  62.900  73.710  1.00 20.64           C
ATOM   5217  C   MET B 290       6.004  62.752  73.088  1.00 22.98           C
ATOM   5218  O   MET B 290       6.933  63.463  73.509  1.00 29.05           O
ATOM   5219  CB  MET B 290       4.815  63.582  75.047  1.00 22.08           C
ATOM   5220  CG  MET B 290       3.566  63.737  75.855  1.00 21.11           C
ATOM   5221  SD  MET B 290       4.061  64.589  77.350  1.00 19.71           S
ATOM   5222  CE  MET B 290       4.643  63.133  78.403  1.00  3.31           C
ATOM   5223  N   ALA B 291       6.135  61.863  72.099  1.00 23.81           N
ATOM   5224  CA  ALA B 291       7.415  61.638  71.447  1.00 25.68           C
ATOM   5225  C   ALA B 291       8.488  62.261  72.329  1.00 23.85           C
ATOM   5226  O   ALA B 291       9.094  63.282  71.987  1.00 26.09           O
ATOM   5227  CB  ALA B 291       7.420  62.278  70.086  1.00 28.53           C
ATOM   5228  N   ALA B 292       8.685  61.664  73.497  1.00 21.19           N
ATOM   5229  CA  ALA B 292       9.674  62.165  74.433  1.00 25.88           C
ATOM   5230  C   ALA B 292      10.872  61.224  74.482  1.00 22.90           C
ATOM   5231  O   ALA B 292      10.742  60.030  74.199  1.00 18.54           O
ATOM   5232  CB  ALA B 292       9.054  62.293  75.817  1.00 31.58           C
ATOM   5233  N   PRO B 293      12.060  61.749  74.837  1.00 22.52           N
ATOM   5234  CA  PRO B 293      13.217  60.856  74.893  1.00 28.95           C
ATOM   5235  C   PRO B 293      12.964  59.820  75.994  1.00 33.22           C
ATOM   5236  O   PRO B 293      12.453  60.151  77.066  1.00 37.99           O
ATOM   5237  CB  PRO B 293      14.379  61.802  75.237  1.00 31.26           C
ATOM   5238  CG  PRO B 293      13.911  63.147  74.783  1.00 35.10           C
ATOM   5239  CD  PRO B 293      12.453  63.130  75.179  1.00 29.37           C
ATOM   5240  N   LEU B 294      13.315  58.570  75.723  1.00 33.61           N
ATOM   5241  CA  LEU B 294      13.121  57.511  76.696  1.00 30.85           C
ATOM   5242  C   LEU B 294      14.393  57.213  77.455  1.00 29.78           C
ATOM   5243  O   LEU B 294      15.291  56.524  76.950  1.00 26.27           O
ATOM   5244  CB  LEU B 294      12.650  56.242  76.007  1.00 37.34           C
ATOM   5245  CG  LEU B 294      11.398  56.505  75.184  1.00 35.26           C
ATOM   5246  CD1 LEU B 294      11.000  55.233  74.453  1.00 42.55           C
ATOM   5247  CD2 LEU B 294      10.278  57.009  76.098  1.00 26.36           C
ATOM   5248  N   PHE B 295      14.475  57.743  78.669  1.00 30.92           N
ATOM   5249  CA  PHE B 295      15.632  57.502  79.506  1.00 34.03           C
ATOM   5250  C   PHE B 295      15.218  56.972  80.858  1.00 34.10           C
ATOM   5251  O   PHE B 295      14.562  57.666  81.645  1.00 42.65           O
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ATOM   5252  CB  PHE B 295      16.448  58.774  79.687  1.00 36.16           C
ATOM   5253  CG  PHE B 295      17.311  59.079  78.527  1.00 30.56           C
ATOM   5254  CD1 PHE B 295      16.749  59.300  77.286  1.00 34.14           C
ATOM   5255  CD2 PHE B 295      18.688  59.091  78.656  1.00 26.11           C
ATOM   5256  CE1 PHE B 295      17.544  59.526  76.181  1.00 38.29           C
ATOM   5257  CE2 PHE B 295      19.496  59.316  77.562  1.00 35.19           C
ATOM   5258  CZ  PHE B 295      18.924  59.534  76.318  1.00 36.95           C
ATOM   5259  N   MET B 296      15.603  55.733  81.128  1.00 22.48           N
ATOM   5260  CA  MET B 296      15.280  55.140  82.401  1.00 21.21           C
ATOM   5261  C   MET B 296      16.238  55.715  83.432  1.00  8.44           C
ATOM   5262  O   MET B 296      17.267  56.304  83.100  1.00 12.07           O
ATOM   5263  CB  MET B 296      15.458  53.625  82.329  1.00 29.96           C
ATOM   5264  CG  MET B 296      14.637  52.943  81.257  1.00 36.98           C
ATOM   5265  SD  MET B 296      15.077  51.204  81.136  1.00 38.86           S
ATOM   5266  CE  MET B 296      16.504  51.292  80.091  1.00 33.37           C
ATOM   5267  N   SER B 297      15.870  55.559  84.688  1.00  3.31           N
ATOM   5268  CA  SER B 297      16.699  55.986  85.791  1.00  8.77           C
ATOM   5269  C   SER B 297      16.290  54.970  86.822  1.00 18.70           C
ATOM   5270  O   SER B 297      15.508  55.254  87.724  1.00 22.71           O
ATOM   5271  CB  SER B 297      16.338  57.395  86.259  1.00 14.75           C
ATOM   5272  OG  SER B 297      17.177  57.802  87.337  1.00  8.66           O
ATOM   5273  N   ASN B 298      16.798  53.764  86.650  1.00 22.61           N
ATOM   5274  CA  ASN B 298      16.484  52.687  87.558  1.00 29.60           C
ATOM   5275  C   ASN B 298      17.692  51.780  87.645  1.00 34.27           C
ATOM   5276  O   ASN B 298      18.615  51.887  86.832  1.00 28.75           O
ATOM   5277  CB  ASN B 298      15.276  51.912  87.030  1.00 32.96           C
ATOM   5278  CG  ASN B 298      15.341  51.698  85.535  1.00 38.86           C
ATOM   5279  OD1 ASN B 298      16.273  51.066  85.024  1.00 39.71           O
ATOM   5280  ND2 ASN B 298      14.356  52.234  84.816  1.00 41.15           N
ATOM   5281  N   ASP B 299      17.695  50.904  88.641  1.00 38.90           N
ATOM   5282  CA  ASP B 299      18.779  49.960  88.772  1.00 39.76           C
ATOM   5283  C   ASP B 299      18.326  48.711  88.014  1.00 42.94           C
ATOM   5284  O   ASP B 299      17.504  47.951  88.521  1.00 56.20           O
ATOM   5285  CB  ASP B 299      19.015  49.622  90.232  1.00 43.59           C
ATOM   5286  CG  ASP B 299      20.187  48.700  90.415  1.00 61.39           C
ATOM   5287  OD1 ASP B 299      20.475  47.933  89.478  1.00 69.62           O
ATOM   5288  OD2 ASP B 299      20.814  48.721  91.494  1.00 72.12           O
ATOM   5289  N   LEU B 300      18.858  48.512  86.807  1.00 37.42           N
ATOM   5290  CA  LEU B 300      18.500  47.367  85.968  1.00 37.23           C
ATOM   5291  C   LEU B 300      18.888  46.014  86.576  1.00 39.88           C
ATOM   5292  O   LEU B 300      18.591  44.963  86.005  1.00 46.92           O
ATOM   5293  CB  LEU B 300      19.135  47.500  84.571  1.00 33.44           C
ATOM   5294  CG  LEU B 300      18.767  48.687  83.670  1.00 42.19           C
ATOM   5295  CD1 LEU B 300      19.097  49.983  84.378  1.00 49.28           C
ATOM   5296  CD2 LEU B 300      19.538  48.609  82.354  1.00 41.83           C
ATOM   5297  N   ARG B 301      19.543  46.040  87.736  1.00 36.03           N
ATOM   5298  CA  ARG B 301      19.965  44.822  88.438  1.00 43.28           C
ATOM   5299  C   ARG B 301      18.796  44.373  89.297  1.00 50.61           C
ATOM   5300  O   ARG B 301      18.327  43.237  89.210  1.00 53.65           O
ATOM   5301  CB  ARG B 301      21.149  45.137  89.346  1.00 43.12           C
ATOM   5302  CG  ARG B 301      22.253  45.888  88.624  1.00 46.62           C
ATOM   5303  CD  ARG B 301      23.340  46.421  89.553  1.00 56.63           C
ATOM   5304  NE  ARG B 301      22.939  47.621  90.285  1.00 58.70           N
ATOM   5305  CZ  ARG B 301      23.778  48.381  90.980  1.00 63.45           C
ATOM   5306  NH1 ARG B 301      25.064  48.074  91.041  1.00 64.54           N
ATOM   5307  NH2 ARG B 301      23.332  49.447  91.619  1.00 72.40           N
ATOM   5308  N   HIS B 302      18.343  45.304  90.128  1.00 56.54           N
ATOM   5309  CA  HIS B 302      17.229  45.082  91.021  1.00 64.34           C
ATOM   5310  C   HIS B 302      16.012  45.816  90.469  1.00 60.12           C
ATOM   5311  O   HIS B 302      15.606  46.864  90.983  1.00 64.27           O
ATOM   5312  CB  HIS B 302      17.564  45.594  92.425  1.00 73.45           C
ATOM   5313  CG  HIS B 302      18.838  45.037  92.984  1.00 85.14           C
ATOM   5314  ND1 HIS B 302      18.988  43.708  93.314  1.00 91.07           N
ATOM   5315  CD2 HIS B 302      20.029  45.625  93.244  1.00 91.96           C
ATOM   5316  CE1 HIS B 302      20.218  43.499  93.751  1.00 94.56           C
ATOM   5317  NE2 HIS B 302      20.870  44.647  93.718  1.00 97.45           N
ATOM   5318  N   ILE B 303      15.455  45.269  89.391  1.00 52.24           N
ATOM   5319  CA  ILE B 303      14.274  45.837  88.763  1.00 42.64           C
ATOM   5320  C   ILE B 303      13.231  44.745  88.606  1.00 45.64           C
ATOM   5321  O   ILE B 303      13.535  43.642  88.143  1.00 43.87           O
ATOM   5322  CB  ILE B 303      14.596  46.424  87.374  1.00 41.50           C
ATOM   5323  CG1 ILE B 303      13.331  47.030  86.769  1.00 49.28           C
ATOM   5324  CG2 ILE B 303      15.139  45.343  86.458  1.00 34.23           C
ATOM   5325  CD1 ILE B 303      13.575  47.812  85.514  1.00 50.30           C
ATOM   5326  N   SER B 304      12.008  45.057  89.013  1.00 46.67           N
ATOM   5327  CA  SER B 304      10.898  44.119  88.930  1.00 48.72           C
ATOM   5328  C   SER B 304      10.760  43.527  87.541  1.00 49.16           C
ATOM   5329  O   SER B 304      11.070  44.185  86.550  1.00 50.82           O
ATOM   5330  CB  SER B 304       9.607  44.833  89.306  1.00 49.11           C
ATOM   5331  OG  SER B 304       9.765  46.233  89.168  1.00 52.40           O
ATOM   5332  N   PRO B 305      10.304  42.268  87.446  1.00 53.50           N
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ATOM   5333  CA  PRO B 305      10.138  41.632  86.136  1.00 55.43           C
ATOM   5334  C   PRO B 305       8.950  42.309  85.463  1.00 53.13           C
ATOM   5335  O   PRO B 305       8.975  42.630  84.266  1.00 41.46           O
ATOM   5336  CB  PRO B 305       9.826  40.178  86.489  1.00 56.22           C
ATOM   5337  CG  PRO B 305      10.401  40.014  87.847  1.00 60.62           C
ATOM   5338  CD  PRO B 305      10.038  41.305  88.521  1.00 58.74           C
ATOM   5339  N   GLN B 306       7.909  42.514  86.268  1.00 57.38           N
ATOM   5340  CA  GLN B 306       6.691  43.154  85.816  1.00 63.53           C
ATOM   5341  C   GLN B 306       7.023  44.523  85.238  1.00 62.83           C
ATOM   5342  O   GLN B 306       6.424  44.946  84.258  1.00 64.21           O
ATOM   5343  CB  GLN B 306       5.703  43.282  86.983  1.00 70.70           C
ATOM   5344  CG  GLN B 306       6.277  43.885  88.256  1.00 88.06           C
ATOM   5345  CD  GLN B 306       5.228  44.056  89.338  1.00 98.86           C
ATOM   5346  OE1 GLN B 306       4.598  43.089  89.765  1.00108.90           O
ATOM   5347  NE2 GLN B 306       5.032  45.293  89.788  1.00100.01           N
ATOM   5348  N   ALA B 307       7.992  45.206  85.838  1.00 60.27           N
ATOM   5349  CA  ALA B 307       8.400  46.525  85.368  1.00 52.67           C
ATOM   5350  C   ALA B 307       9.104  46.388  84.027  1.00 49.37           C
ATOM   5351  O   ALA B 307       8.612  46.870  83.009  1.00 47.80           O
ATOM   5352  CB  ALA B 307       9.328  47.179  86.376  1.00 50.06           C
ATOM   5353  N   LYS B 308      10.260  45.729  84.041  1.00 48.26           N
ATOM   5354  CA  LYS B 308      11.056  45.509  82.831  1.00 49.41           C
ATOM   5355  C   LYS B 308      10.185  45.131  81.636  1.00 47.85           C
ATOM   5356  O   LYS B 308      10.506  45.464  80.492  1.00 42.82           O
ATOM   5357  CB  LYS B 308      12.075  44.388  83.059  1.00 51.52           C
ATOM   5358  CG  LYS B 308      12.844  44.012  81.802  1.00 58.09           C
ATOM   5359  CD  LYS B 308      13.486  42.648  81.907  1.00 65.32           C
ATOM   5360  CE  LYS B 308      12.437  41.566  82.032  1.00 72.87           C
ATOM   5361  NZ  LYS B 308      13.054  40.221  81.974  1.00 73.72           N
ATOM   5362  N   ALA B 309       9.099  44.414  81.910  1.00 46.79           N
ATOM   5363  CA  ALA B 309       8.184  43.986  80.864  1.00 43.70           C
ATOM   5364  C   ALA B 309       7.609  45.208  80.176  1.00 39.92           C
ATOM   5365  O   ALA B 309       7.671  45.351  78.952  1.00 40.53           O
ATOM   5366  CB  ALA B 309       7.071  43.154  81.461  1.00 45.68           C
ATOM   5367  N   LEU B 310       7.045  46.091  80.986  1.00 36.87           N
ATOM   5368  CA  LEU B 310       6.464  47.325  80.491  1.00 32.15           C
ATOM   5369  C   LEU B 310       7.526  48.151  79.771  1.00 30.53           C
ATOM   5370  O   LEU B 310       7.392  48.442  78.596  1.00 27.92           O
ATOM   5371  CB  LEU B 310       5.892  48.124  81.661  1.00 33.14           C
ATOM   5372  CG  LEU B 310       5.357  49.532  81.400  1.00 40.85           C
ATOM   5373  CD1 LEU B 310       4.349  49.513  80.252  1.00 52.52           C
ATOM   5374  CD2 LEU B 310       4.723  50.071  82.693  1.00 50.61           C
ATOM   5375  N   LEU B 311       8.584  48.523  80.482  1.00 26.12           N
ATOM   5376  CA  LEU B 311       9.671  49.308  79.910  1.00 25.13           C
ATOM   5377  C   LEU B 311      10.113  48.841  78.515  1.00 32.11           C
ATOM   5378  O   LEU B 311      10.567  49.649  77.700  1.00 33.23           O
ATOM   5379  CB  LEU B 311      10.865  49.280  80.864  1.00 12.06           C
ATOM   5380  CG  LEU B 311      10.705  50.239  82.036  1.00 26.57           C
ATOM   5381  CD1 LEU B 311      11.473  49.752  83.244  1.00 31.27           C
ATOM   5382  CD2 LEU B 311      11.182  51.614  81.598  1.00 17.17           C
ATOM   5383  N   GLN B 312       9.972  47.544  78.239  1.00 36.20           N
ATOM   5384  CA  GLN B 312      10.383  46.972  76.958  1.00 36.10           C
ATOM   5385  C   GLN B 312       9.260  46.597  76.002  1.00 42.91           C
ATOM   5386  O   GLN B 312       9.535  46.061  74.935  1.00 46.16           O
ATOM   5387  CB  GLN B 312      11.243  45.731  77.198  1.00 34.90           C
ATOM   5388  CG  GLN B 312      12.474  45.966  78.052  1.00 43.65           C
ATOM   5389  CD  GLN B 312      13.431  44.787  78.039  1.00 45.97           C
ATOM   5390  OE1 GLN B 312      13.015  43.641  78.168  1.00 51.35           O
ATOM   5391  NE2 GLN B 312      14.722  45.066  77.892  1.00 42.69           N
ATOM   5392  N   ASP B 313       8.008  46.870  76.359  1.00 45.00           N
ATOM   5393  CA  ASP B 313       6.892  46.527  75.474  1.00 51.81           C
ATOM   5394  C   ASP B 313       7.108  47.009  74.025  1.00 53.55           C
ATOM   5395  O   ASP B 313       6.974  48.202  73.722  1.00 49.29           O
ATOM   5396  CB  ASP B 313       5.576  47.103  76.005  1.00 54.01           C
ATOM   5397  CG  ASP B 313       4.361  46.603  75.220  1.00 60.77           C
ATOM   5398  OD1 ASP B 313       4.414  46.610  73.961  1.00 64.06           O
ATOM   5399  OD2 ASP B 313       3.353  46.215  75.857  1.00 53.70           O
ATOM   5400  N   LYS B 314       7.416  46.062  73.139  1.00 57.01           N
ATOM   5401  CA  LYS B 314       7.681  46.344  71.730  1.00 61.78           C
ATOM   5402  C   LYS B 314       6.675  47.266  71.048  1.00 58.40           C
ATOM   5403  O   LYS B 314       7.058  48.159  70.294  1.00 60.17           O
ATOM   5404  CB  LYS B 314       7.740  45.036  70.934  1.00 76.80           C
ATOM   5405  CG  LYS B 314       8.778  44.038  71.422  1.00102.87           C
ATOM   5406  CD  LYS B 314       8.732  42.756  70.587  1.00117.39           C
ATOM   5407  CE  LYS B 314       9.822  41.776  71.005  1.00124.70           C
ATOM   5408  NZ  LYS B 314       9.841  40.579  70.115  1.00132.68           N
ATOM   5409  N   ASP B 315       5.392  47.032  71.301  1.00 56.81           N
ATOM   5410  CA  ASP B 315       4.317  47.810  70.687  1.00 50.96           C
ATOM   5411  C   ASP B 315       4.255  49.248  71.169  1.00 46.39           C
ATOM   5412  O   ASP B 315       3.860  50.143  70.412  1.00 41.44           O
ATOM   5413  CB  ASP B 315       2.976  47.135  70.961  1.00 54.17           C
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ATOM   5414  CG  ASP B 315       3.016  45.649  70.699  1.00 60.24           C
ATOM   5415  OD1 ASP B 315       3.030  45.253  69.513  1.00 57.63           O
ATOM   5416  OD2 ASP B 315       3.041  44.880  71.687  1.00 62.09           O
ATOM   5417  N   VAL B 316       4.634  49.469  72.428  1.00 42.81           N
ATOM   5418  CA  VAL B 316       4.601  50.812  72.994  1.00 41.35           C
ATOM   5419  C   VAL B 316       5.838  51.596  72.578  1.00 49.57           C
ATOM   5420  O   VAL B 316       5.753  52.778  72.234  1.00 56.13           O
ATOM   5421  CB  VAL B 316       4.488  50.759  74.535  1.00 30.91           C
ATOM   5422  CG1 VAL B 316       4.408  52.170  75.117  1.00 37.66           C
ATOM   5423  CG2 VAL B 316       3.241  49.990  74.924  1.00 38.09           C
ATOM   5424  N   ILE B 317       6.988  50.935  72.598  1.00 52.84           N
ATOM   5425  CA  ILE B 317       8.221  51.590  72.189  1.00 50.65           C
ATOM   5426  C   ILE B 317       8.046  52.038  70.747  1.00 51.01           C
ATOM   5427  O   ILE B 317       8.483  53.115  70.355  1.00 49.49           O
ATOM   5428  CB  ILE B 317       9.403  50.628  72.232  1.00 47.80           C
ATOM   5429  CG1 ILE B 317       9.421  49.888  73.568  1.00 45.69           C
ATOM   5430  CG2 ILE B 317      10.695  51.401  72.016  1.00 49.27           C
ATOM   5431  CD1 ILE B 317      10.497  48.824  73.658  1.00 57.21           C
ATOM   5432  N   ALA B 318       7.396  51.184  69.968  1.00 47.41           N
ATOM   5433  CA  ALA B 318       7.139  51.453  68.569  1.00 47.73           C
ATOM   5434  C   ALA B 318       6.400  52.765  68.443  1.00 45.10           C
ATOM   5435  O   ALA B 318       6.787  53.641  67.680  1.00 51.89           O
ATOM   5436  CB  ALA B 318       6.315  50.331  67.965  1.00 49.34           C
ATOM   5437  N   ILE B 319       5.327  52.910  69.195  1.00 38.46           N
ATOM   5438  CA  ILE B 319       4.574  54.146  69.123  1.00 35.63           C
ATOM   5439  C   ILE B 319       5.474  55.344  69.390  1.00 36.82           C
ATOM   5440  O   ILE B 319       5.567  56.249  68.574  1.00 41.34           O
ATOM   5441  CB  ILE B 319       3.407  54.128  70.118  1.00 33.97           C
ATOM   5442  CG1 ILE B 319       2.335. 53.165  69.607  1.00 42.09           C
ATOM   5443  CG2 ILE B 319       2.837  55.531  70.302  1.00 23.48           C
ATOM   5444  CD1 ILE B 319       1.200  52.970  70.559  1.00 54.00           C
ATOM   5445  N   ASN B 320       6.149  55.349  70.528  1.00 35.81           N
ATOM   5446  CA  ASN B 320       7.035  56.459  70.859  1.00 36.40           C
ATOM   5447  C   ASN B 320       8.121  56.649  69.800  1.00 35.02           C
ATOM   5448  O   ASN B 320       8.548  57.777  69.534  1.00 38.20           O
ATOM   5449  CB  ASN B 320       7.675  56.222  72.232  1.00 43.77           C
ATOM   5450  CG  ASN B 320       8.791  57.189  72.527  1.00 50.25           C
ATOM   5451  OD1 ASN B 320       9.820  57.183  71.856  1.00 55.90           O
ATOM   5452  ND2 ASN B 320       8.595  58.031  73.536  1.00 51.06           N
ATOM   5453  N   GLN B 321       8.553  55.539  69.199  1.00 37.76           N
ATOM   5454  CA  GLN B 321       9.605  55.542  68.176  1.00 49.96           C
ATOM   5455  C   GLN B 321       9.075  55.766  66.768  1.00 57.68           C
ATOM   5456  O   GLN B 321       9.796  55.571  65.785  1.00 59.07           O
ATOM   5457  CB  GLN B 321      10.381  54.217  68.206  1.00 44.90           C
ATOM   5458  CG  GLN B 321      11.433  54.121  69.288  1.00 46.70           C
ATOM   5459  CD  GLN B 321      12.465  55.214  69.156  1.00 47.84           C
ATOM   5460  OE1 GLN B 321      13.001  55.445  68.075  1.00 39.88           O
ATOM   5461  NE2 GLN B 321      12.748  55.898  70.255  1.00 41.72           N
ATOM   5462  N   ASP B 322       7.811  56.163  66.677  1.00 62.92           N
ATOM   5463  CA  ASP B 322       7.179  56.415  65.388  1.00 60.53           C
ATOM   5464  C   ASP B 322       8.128  57.252  64.543  1.00 54.21           C
ATOM   5465  O   ASP B 322       8.665  58.258  65.007  1.00 50.45           O
ATOM   5466  CB  ASP B 322       5.846  57.142  65.592  1.00 63.03           C
ATOM   5467  CG  ASP B 322       5.023  57.222  64.330  1.00 60.44           C
ATOM   5468  OD1 ASP B 322       4.739  56.161  63.729  1.00 51.90           O
ATOM   5469  OD2 ASP B 322       4.652  58.351  63.954  1.00 56.64           O
ATOM   5470  N   PRO B 323       8.340  56.844  63.287  1.00 48.81           N
ATOM   5471  CA  PRO B 323       9.227  57.517  62.336  1.00 49.20           C
ATOM   5472  C   PRO B 323       8.723  58.889  61.960  1.00 49.78           C
ATOM   5473  O   PRO B 323       9.507  59.781  61.661  1.00 50.30           O
ATOM   5474  CB  PRO B 323       9.210  56.579  61.147  1.00 49.51           C
ATOM   5475  CG  PRO B 323       7.765  56.174  61.116  1.00 54.97           C
ATOM   5476  CD  PRO B 323       7.485  55.866  62.586  1.00 50.18           C
ATOM   5477  N   LEU B 324       7.405  59.036  61.965  1.00 46.95           N
ATOM   5478  CA  LEU B 324       6.769  60.290  61.619  1.00 46.62           C
ATOM   5479  C   LEU B 324       7.305  61.438  62.469  1.00 46.44           C
ATOM   5480  O   LEU B 324       7.764  62.444  61.938  1.00 50.63           O
ATOM   5481  CB  LEU B 324       5.262  60.179  61.809  1.00 52.20           C
ATOM   5482  CG  LEU B 324       4.419  60.922  60.775  1.00 54.98           C
ATOM   5483  CD1 LEU B 324       3.002  61.035  61.284  1.00 53.77           C
ATOM   5484  CD2 LEU B 324       4.991  62.300  60.518  1.00 54.88           C
ATOM   5485  N   GLY B 325       7.234  61.302  63.786  1.00 42.83           N
ATOM   5486  CA  GLY B 325       7.751  62.356  64.633  1.00 49.56           C
ATOM   5487  C   GLY B 325       6.734  63.435  64.915  1.00 52.99           C
ATOM   5488  O   GLY B 325       7.074  64.613  65.004  1.00 57.80           O
ATOM   5489  N   LYS B 326       5.478  63.030  65.051  1.00 51.78           N
ATOM   5490  CA  LYS B 326       4.399  63.962  65.352  1.00 50.83           C
ATOM   5491  C   LYS B 326       4.006  63.841  66.836  1.00 47.62           C
ATOM   5492  O   LYS B 326       3.348  62.879  67.237  1.00 55.21           O
ATOM   5493  CB  LYS B 326       3.196  63.663  64.450  1.00 60.35           C
ATOM   5494  CG  LYS B 326       3.429  63.995  62.985  1.00 72.43           C
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ATOM   5495  CD  LYS B 326       3.467  65.503  62.743  1.00 82.46           C
ATOM   5496  CE  LYS B 326       2.087  66.119  62.908  1.00 86.36           C
ATOM   5497  NZ  LYS B 326       2.099  67.587  62.667  1.00 88.74           N
ATOM   5498  N   GLN B 327       4.401  64.821  67.645  1.00 36.75           N
ATOM   5499  CA  GLN B 327       4.097  64.770  69.068  1.00 33.19           C
ATOM   5500  C   GLN B 327       2.609  64.823  69.383  1.00 31.89           C
ATOM   5501  O   GLN B 327       1.871  65.600  68.807  1.00 32.48           O
ATOM   5502  CB  GLN B 327       4.822  65.895  69.812  1.00 26.14           C
ATOM   5503  CG  GLN B 327       4.941  65.663  71.317  1.00 19.26           C
ATOM   5504  CD  GLN B 327       6.152  66.351  71.913  1.00 27.52           C
ATOM   5505  OE1 GLN B 327       7.291  65.991  71.630  1.00 31.18           O
ATOM   5506  NE2 GLN B 327       5.910  67.348  72.740  1.00 26.20           N
ATOM   5507  N   GLY B 328       2.180  63.992  70.323  1.00 30.12           N
ATOM   5508  CA  GLY B 328       0.779  63.952  70.699  1.00 28.50           C
ATOM   5509  C   GLY B 328       0.356  65.181  71.464  1.00 30.24           C
ATOM   5510  O   GLY B 328       1.103  66.158  71.553  1.00 32.72           O
ATOM   5511  N   TYR B 329      -0.844  65.120  72.028  1.00 29.80           N
ATOM   5512  CA  TYR B 329      -1.385  66.241  72.777  1.00 32.42           C
ATOM   5513  C   TYR B 329      -2.696  65.882  73.453  1.00 30.05           C
ATOM   5514  O   TYR B 329      -3.376  64.937  73.050  1.00 34.49           O
ATOM   5515  CB  TYR B 329      -1.622  67.413  71.832  1.00 43.23           C
ATOM   5516  CG  TYR B 329      -2.507  67.045  70.657  1.00 50.66           C
ATOM   5517  CD1 TYR B 329      -3.876  66.840  70.820  1.00 57.72           C
ATOM   5518  CD2 TYR B 329      -1.964  66.858  69.388  1.00 49.27           C
ATOM   5519  CE1 TYR B 329      -4.674  66.455  69.746  1.00 56.30           C
ATOM   5520  CE2 TYR B 329      -2.755  66.473  68.312  1.00 48.22           C
ATOM   5521  CZ  TYR B 329      -4.102  66.273  68.499  1.00 47.50           C
ATOM   5522  OH  TYR B 329      -4.874  65.881  67.442  1.00 46.62           O
ATOM   5523  N   GLN B 330      -3.050  66.655  74.473  1.00 29.84           N
ATOM   5524  CA  GLN B 330      -4.287  66.438  75.199  1.00 31.22           C
ATOM   5525  C   GLN B 330      -5.417  66.915  74.316  1.00 33.66           C
ATOM   5526  O   GLN B 330      -5.362  67.995  73.737  1.00 31.76           O
ATOM   5527  CB  GLN B 330      -4.286  67.234  76.497  1.00 34.22           C
ATOM   5528  CG  GLN B 330      -5.544  67.098  77.308  1.00 43.47           C
ATOM   5529  CD  GLN B 330      -5.587  68.102  78.434  1.00 51.85           C
ATOM   5530  OE1 GLN B 330      -5.650  69.311  78.191  1.00 73.21           O
ATOM   5531  NE2 GLN B 330      -5.543  67.616  79.679  1.00 29.07           N
ATOM   5532  N   LEU B 331      -6.447  66.100  74.209  1.00 36.00           N
ATOM   5533  CA  LEU B 331      -7.577  66.471  73.396  1.00 43.25           C
ATOM   5534  C   LEU B 331      -8.654  67.027  74.308  1.00 48.53           C
ATOM   5535  O   LEU B 331      -9.072  68.176  74.162  1.00 64.23           O
ATOM   5536  CB  LEU B 331      -8.105  65.258  72.629  1.00 47.74           C
ATOM   5537  CG  LEU B 331      -9.408  65.458  71.851  1.00 62.42           C
ATOM   5538  CD1 LEU B 331      -9.428  66.831  71.210  1.00 73.58           C
ATOM   5539  CD2 LEU B 331      -9.544  64.374  70.800  1.00 67.66           C
ATOM   5540  N   ARG B 332      -9.081  66.216  75.267  1.00 43.33           N
ATOM   5541  CA  ARG B 332     -10.128  66.621  76.191  1.00 51.00           C
ATOM   5542  C   ARG B 332      -9.720  66.842  77.651  1.00 54.03           C
ATOM   5543  O   ARG B 332      -8.658  66.403  78.095  1.00 58.81           O
ATOM   5544  CB  ARG B 332     -11.264  65.601  76.138  1.00 53.85           C
ATOM   5545  CG  ARG B 332     -12.221  65.814  74.987  1.00 65.81           C
ATOM   5546  CD  ARG B 332     -13.250  64.702  74.906  1.00 74.40           C
ATOM   5547  NE  ARG B 332     -14.437  65.091  74.142  1.00 90.15           N
ATOM   5548  CZ  ARG B 332     -14.417  65.591  72.908  1.00 93.10           C
ATOM   5549  NH1 ARG B 332     -13.266  65.773  72.276  1.00 90.50           N
ATOM   5550  NH2 ARG B 332     -15.554  65.910  72.300  1.00 94.95           N
ATOM   5551  N   GLN B 333     -10.595  67.538  78.377  1.00 59.53           N
ATOM   5552  CA  GLN B 333     -10.437  67.859  79.799  1.00 59.64           C
ATOM   5553  C   GLN B 333     -11.779  67.531  80.427  1.00 60.67           C
ATOM   5554  O   GLN B 333     -12.652  66.974  79.770  1.00 63.34           O
ATOM   5555  CB  GLN B 333     -10.172  69.357  79.989  1.00 66.45           C
ATOM   5556  CG  GLN B 333      -8.737  69.784  79.800  1.00 73.50           C
ATOM   5557  CD  GLN B 333      -7.953  69.703  81.085  1.00 74.39           C
ATOM   5558  OE1 GLN B 333      -8.156  68.792  81.885  1.00 68.78           O
ATOM   5559  NE2 GLN B 333      -7.043  70.651  81.290  1.00 75.58           N
ATOM   5560  N   GLY B 334     -11.942  67.873  81.697  1.00 61.52           N
ATOM   5561  CA  GLY B 334     -13.215  67.643  82.362  1.00 64.25           C
ATOM   5562  C   GLY B 334     -13.545  66.316  83.026  1.00 57.75           C
ATOM   5563  O   GLY B 334     -13.184  65.241  82.540  1.00 48.01           O
ATOM   5564  N   ASP B 335     -14.252  66.418  84.151  1.00 55.93           N
ATOM   5565  CA  ASP B 335     -14.700  65.267  84.935  1.00 56.96           C
ATOM   5566  C   ASP B 335     -13.594  64.361  85.456  1.00 53.22           C
ATOM   5567  O   ASP B 335     -13.828  63.188  85.763  1.00 53.10           O
ATOM   5568  CB  ASP B 335     -15.694  64.435  84.115  1.00 65.57           C
ATOM   5569  CG  ASP B 335     -16.335  63.330  84.929  1.00 74.34           C
ATOM   5570  OD1 ASP B 335     -16.702  63.595  86.093  1.00 78.23           O
ATOM   5571  OD2 ASP B 335     -16.483  62.202  84.409  1.00 77.66           O
ATOM   5572  N   ASN B 336     -12.395  64.908  85.586  1.00 51.36           N
ATOM   5573  CA  ASN B 336     -11.283  64.105  86.048  1.00 45.32           C
ATOM   5574  C   ASN B 336     -11.034  63.039  85.017  1.00 37.63           C
ATOM   5575  O   ASN B 336     -11.031  61.856  85.321  1.00 34.06           O
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ATOM   5576  CB  ASN B 336     -11.597  63.432  87.384  1.00 50.91           C
ATOM   5577  CG  ASN B 336     -11.058  64.196  88.555  1.00 58.30           C
ATOM   5578  OD1 ASN B 336     -10.080  64.937  88.433  1.00 69.08           O
ATOM   5579  ND2 ASN B 336     -11.680  64.009  89.712  1.00 58.57           N
ATOM   5580  N   PHE B 337     -10.861  63.470  83.783  1.00 31.44           N
ATOM   5581  CA  PHE B 337     -10.581  62.562  82.700  1.00 31.17           C
ATOM   5582  C   PHE B 337      -9.765  63.351  81.705  1.00 32.33           C
ATOM   5583  O   PHE B 337     -10.078  64.513  81.435  1.00 36.66           O
ATOM   5584  CB  PHE B 337     -11.876  62.075  82.045  1.00 32.86           C
ATOM   5585  CG  PHE B 337     -12.306  60.699  82.488  1.00 39.46           C
ATOM   5586  CD1 PHE B 337     -13.653  60.415  82.718  1.00 49.81           C
ATOM   5587  CD2 PHE B 337     -11.371  59.683  82.661  1.00 47.92           C
ATOM   5588  CE1 PHE B 337     -14.063  59.141  83.114  1.00 54.96           C
ATOM   5589  CE2 PHE B 337     -11.769  58.407  83.056  1.00 63.20           C
ATOM   5590  CZ  PHE B 337     -13.121  58.138  83.283  1.00 65.67           C
ATOM   5591  N   GLU B 338      -8.703  62.737  81.189  1.00 32.09           N
ATOM   5592  CA  GLU B 338      -7.849  63.373  80.189  1.00 33.18           C
ATOM   5593  C   GLU B 338      -7.723  62.467  78.965  1.00 33.15           C
ATOM   5594  O   GLU B 338      -7.452  61.275  79.090  1.00 40.19           O
ATOM   5595  CB  GLU B 338      -6.449  63.648  80.748  1.00 25.42           C
ATOM   5596  CG  GLU B 338      -6.311  64.927  81.545  1.00 33.52           C
ATOM   5597  CD  GLU B 338      -4.855  65.332  81.751  1.00 38.56           C
ATOM   5598  OE1 GLU B 338      -4.182  65.626  80.735  1.00 33.53           O
ATOM   5599  OE2 GLU B 338      -4.387  65.354  82.920  1.00 39.80           O
ATOM   5600  N   VAL B 339      -7.924  63.028  77.781  1.00 26.69           N
ATOM   5601  CA  VAL B 339      -7.797  62.236  76.571  1.00 13.92           C
ATOM   5602  C   VAL B 339      -6.660  62.746  75.705  1.00 13.55           C
ATOM   5603  O   VAL B 339      -6.734  63.847  75.155  1.00 17.78           O
ATOM   5604  CB  VAL B 339      -9.070  62.257  75.715  1.00 13.19           C
ATOM   5605  CG1 VAL B 339      -8.781  61.562  74.390  1.00  3.31           C
ATOM   5606  CG2 VAL B 339     -10.218  61.564  76.451  1.00  3.31           C
ATOM   5607  N   TRP B 340      -5.611  61.937  75.590  1.00  9.29           N
ATOM   5608  CA  TRP B 340      -4.457  62.302  74.783  1.00 14.13           C
ATOM   5609  C   TRP B 340      -4.443  61.493  73.494  1.00 17.31           C
ATOM   5610  O   TRP B 340      -5.117  60.465  73.402  1.00 26.52           O
ATOM   5611  CB  TRP B 340      -3.166  62.065  75.574  1.00 16.12           C
ATOM   5612  CG  TRP B 340      -3.007  63.005  76.719  1.00 16.94           C
ATOM   5613  CD1 TRP B 340      -3.852  63.151  77.778  1.00 21.92           C
ATOM   5614  CD2 TRP B 340      -1.962  63.968  76.902  1.00 23.88           C
ATOM   5615  NE1 TRP B 340      -3.402  64.153  78.613  1.00 29.39           N
ATOM   5616  CE2 TRP B 340      -2.245  64.671  78.096  1.00 31.49           C
ATOM   5617  CE3 TRP B 340      -0.815  64.307  76.174  1.00 28.70           C
ATOM   5618  CZ2 TRP B 340      -1.427  65.690  78.574  1.00 40.20           C
ATOM   5619  CZ3 TRP B 340      -0.004  65.319  76.648  1.00 27.49           C
ATOM   5620  CH2 TRP B 340      -0.315  65.999  77.838  1.00 40.53           C
ATOM   5621  N   GLU B 341      -3.685  61.970  72.506  1.00  9.67           N
ATOM   5622  CA  GLU B 341      -3.574  61.281  71.229  1.00  7.62           C
ATOM   5623  C   GLU B 341      -2.411  61.810  70.387  1.00 13.01           C
ATOM   5624  O   GLU B 341      -2.079  62.994  70.425  1.00 18.84           O
ATOM   5625  CB  GLU B 341      -4.876  61.417  70.427  1.00  3.31           C
ATOM   5626  CG  GLU B 341      -4.949  62.688  69.565  1.00 25.60           C
ATOM   5627  CD  GLU B 341      -6.299  62.880  68.885  1.00 30.41           C
ATOM   5628  OE1 GLU B 341      -6.778  61.938  68.223  1.00 27.70           O
ATOM   5629  OE2 GLU B 341      -6.880  63.980  68.998  1.00 36.12           O
ATOM   5630  N   ARG B 342      -1.803  60.918  69.620  1.00 15.38           N
ATOM   5631  CA  ARG B 342      -0.696  61.279  68.759  1.00 21.84           C
ATOM   5632  C   ARG B 342      -0.915  60.596  67.429  1.00 17.39           C
ATOM   5633  O   ARG B 342      -1.234  59.408  67.379  1.00 12.91           O
ATOM   5634  CB  ARG B 342       0.629  60.789  69.341  1.00 26.66           C
ATOM   5635  CG  ARG B 342       1.797  60.879  68.353  1.00 29.85           C
ATOM   5636  CD  ARG B 342       2.980  60.020  68.783  1.00 35.01           C
ATOM   5637  NE  ARG B 342       4.174  60.304  67.997  1.00 42.30           N
ATOM   5638  CZ  ARG B 342       5.356  59.737  68.209  1.00 48.51           C
ATOM   5639  NH1 ARG B 342       5.500  58.852  69.181  1.00 43.34           N
ATOM   5640  NH2 ARG B 342       6.400  60.064  67.461  1.00 53.48           N
ATOM   5641  N   PRO B 343      -0.785  61.341  66.325  1.00 17.23           N
ATOM   5642  CA  PRO B 343      -0.985  60.669  65.052  1.00 13.34           C
ATOM   5643  C   PRO B 343       0.328  59.935  64.777  1.00 19.66           C
ATOM   5644  O   PRO B 343       1.407  60.426  65.126  1.00 11.42           O
ATOM   5645  CB  PRO B 343      -1.245  61.832  64.109  1.00 14.10           C
ATOM   5646  CG  PRO B 343      -0.357  62.887  64.651  1.00 11.87           C
ATOM   5647  CD  PRO B 343      -0.604  62.791  66.130  1.00 20.84           C
ATOM   5648  N   LEU B 344       0.233  58.750  64.186  1.00 29.17           N
ATOM   5649  CA  LEU B 344       1.415  57.953  63.876  1.00 39.10           C
ATOM   5650  C   LEU B 344       1.607  57.953  62.369  1.00 48.55           C
ATOM   5651  O   LEU B 344       1.271  58.922  61.706  1.00 56.26           O
ATOM   5652  CB  LEU B 344       1.214  56.527  64.373  1.00 27.36           C
ATOM   5653  CG  LEU B 344       0.596  56.546  65.763  1.00 33.56           C
ATOM   5654  CD1 LEU B 344       0.240  55.146  66.204  1.00 40.45           C
ATOM   5655  CD2 LEU B 344       1.572  57.209  66.716  1.00 36.36           C
ATOM   5656  N   SER B 345       2.154  56.870  61.833  1.00 51.42           N
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ATOM   5657  CA  SER B 345       2.366  56.764  60.397  1.00 50.43           C
ATOM   5658  C   SER B 345       1.310  55.819  59.866  1.00 53.44           C
ATOM   5659  O   SER B 345       0.777  55.007  60.617  1.00 59.99           O
ATOM   5660  CB  SER B 345       3.750  56.191  60.099  1.00 49.81           C
ATOM   5661  OG  SER B 345       4.751  56.898  60.805  1.00 65.14           O
ATOM   5662  N   GLY B 346       1.001  55.929  58.579  1.00 51.96           N
ATOM   5663  CA  GLY B 346       0.018  55.047  57.972  1.00 62.14           C
ATOM   5664  C   GLY B 346      -1.408  55.183  58.462  1.00 66.08           C
ATOM   5665  O   GLY B 346      -2.109  54.183  58.619  1.00 72.41           O
ATOM   5666  N   LEU B 347      -1.841  56.416  58.706  1.00 67.58           N
ATOM   5667  CA  LEU B 347      -3.206  56.680  59.158  1.00 71.85           C
ATOM   5668  C   LEU B 347      -3.552  56.014  60.484  1.00 70.69           C
ATOM   5669  O   LEU B 347      -4.725  55.849  60.830  1.00 75.72           O
ATOM   5670  CB  LEU B 347      -4.205  56.224  58.090  1.00 79.33           C
ATOM   5671  CG  LEU B 347      -4.052  56.850  56.699  1.00 86.76           C
ATOM   5672  CD1 LEU B 347      -5.015  56.184  55.726  1.00 94.59           C
ATOM   5673  CD2 LEU B 347      -4.311  58.350  56.771  1.00 93.49           C
ATOM   5674  N   ALA B 348      -2.522  55.622  61.221  1.00 64.54           N
ATOM   5675  CA  ALA B 348      -2.712  54.974  62.508  1.00 55.40           C
ATOM   5676  C   ALA B 348      -2.570  56.034  63.588  1.00 47.16           C
ATOM   5677  O   ALA B 348      -1.744  56.943  63.472  1.00 52.56           O
ATOM   5678  CB  ALA B 348      -1.680  53.882  62.696  1.00 65.49           C
ATOM   5679  N   TRP B 349      -3.378  55.921  64.635  1.00 33.00           N
ATOM   5680  CA  TRP B 349      -3.341  56.885  65.724  1.00 29.96           C
ATOM   5681  C   TRP B 349      -3.239  56.227  67.086  1.00 24.51           C
ATOM   5682  O   TRP B 349      -3.819  55.166  67.329  1.00 28.15           O
ATOM   5683  CB  TRP B 349      -4.583  57.764  65.694  1.00 30.99           C
ATOM   5684  CG  TRP B 349      -4.627  58.696  64.547  1.00 39.58           C
ATOM   5685  CD1 TRP B 349      -4.546  58.379  63.209  1.00 48.37           C
ATOM   5686  CD2 TRP B 349      -4.829  60.101  64.614  1.00 39.41           C
ATOM   5687  NE1 TRP B 349      -4.691  59.510  62.447  1.00 44.17           N
ATOM   5688  CE2 TRP B 349      -4.869  60.583  63.285  1.00 44.56           C
ATOM   5689  CE3 TRP B 349      -4.983  61.005  65.664  1.00 48.26           C
ATOM   5690  CZ2 TRP B 349      -5.065  61.938  62.988  1.00 51.67           C
ATOM   5691  CZ3 TRP B 349      -5.174  62.342  65.372  1.00 53.35           C
ATOM   5692  CH2 TRP B 349      -5.214  62.799  64.048  1.00 55.52           C
ATOM   5693  N   ALA B 350      -2.496  56.874  67.976  1.00 21.97           N
ATOM   5694  CA  ALA B 350      -2.317  56.361  69.318  1.00 15.04           C
ATOM   5695  C   ALA B 350      -3.203  57.220  70.204  1.00 13.29           C
ATOM   5696  O   ALA B 350      -3.326  58.427  69.956  1.00 21.97           O
ATOM   5697  CB  ALA B 350      -0.859  56.477  69.724  1.00 14.88           C
ATOM   5698  N   VAL B 351      -3.828  56.615  71.216  1.00 11.43           N
ATOM   5699  CA  VAL B 351      -4.700  57.377  72.109  1.00 16.42           C
ATOM   5700  C   VAL B 351      -4.553  57.023  73.587  1.00 14.52           C
ATOM   5701  O   VAL B 351      -4.475  55.848  73.942  1.00 20.61           O
ATOM   5702  CB  VAL B 351      -6.187  57.209  71.731  1.00 14.15           C
ATOM   5703  CG1 VAL B 351      -7.039  58.140  72.591  1.00 18.62           C
ATOM   5704  CG2 VAL B 351      -6.402  57.518  70.257  1.00 10.92           C
ATOM   5705  N   ALA B 352      -4.543  58.045  74.442  1.00  7.24           N
ATOM   5706  CA  ALA B 352      -4.405  57.836  75.878  1.00 12.07           C
ATOM   5707  C   ALA B 352      -5.681  58.164  76.640  1.00  5.81           C
ATOM   5708  O   ALA B 352      -6.467  59.021  76.239  1.00  3.31           O
ATOM   5709  CB  ALA B 352      -3.249  58.667  76.423  1.00 31.41           C
ATOM   5710  N   MET B 353      -5.871  57.467  77.750  1.00  9.84           N
ATOM   5711  CA  MET B 353      -7.042  57.658  78.589  1.00 22.44           C
ATOM   5712  C   MET B 353      -6.618  57.603  80.066  1.00 27.10           C
ATOM   5713  O   MET B 353      -6.460  56.525  80.650  1.00 32.99           O
ATOM   5714  CB  MET B 353      -8.077  56.572  78.267  1.00 19.22           C
ATOM   5715  CG  MET B 353      -9.415  57.108  77.759  1.00 18.91           C
ATOM   5716  SD  MET B 353      -9.999  56.263  76.279  1.00 26.72           S
ATOM   5717  CE  MET B 353     -10.279  54.594  76.866  1.00 38.91           C
ATOM   5718  N   ILE B 354      -6.439  58.783  80.654  1.00 21.63           N
ATOM   5719  CA  ILE B 354      -6.008  58.920  82.037  1.00 19.84           C
ATOM   5720  C   ILE B 354      -7.171  59.205  82.975  1.00 20.11           C
ATOM   5721  O   ILE B 354      -7.959  60.121  82.716  1.00 23.90           O
ATOM   5722  CB  ILE B 354      -5.036  60.090  82.193  1.00 18.54           C
ATOM   5723  CG1 ILE B 354      -4.079  60.144  81.012  1.00 20.37           C
ATOM   5724  CG2 ILE B 354      -4.258  59.929  83.481  1.00 26.13           C
ATOM   5725  CD1 ILE B 354      -3.386  61.474  80.867  1.00 37.14           C
ATOM   5726  N   ASN B 355      -7.276  58.431  84.056  1.00 23.98           N
ATOM   5727  CA  ASN B 355      -8.324  58.649  85.041  1.00 28.05           C
ATOM   5728  C   ASN B 355      -7.701  59.455  86.179  1.00 25.20           C
ATOM   5729  O   ASN B 355      -7.084  58.905  87.080  1.00 25.36           O
ATOM   5730  CB  ASN B 355      -8.877  57.308  85.545  1.00 22.56           C
ATOM   5731  CG  ASN B 355      -9.823  57.466  86.735  1.00 21.05           C
ATOM   5732  OD1 ASN B 355     -10.566  58.445  86.849  1.00 32.29           O
ATOM   5733  ND2 ASN B 355      -9.803  56.487  87.620  1.00 17.99           N
ATOM   5734  N   ARG B 356      -7.841  60.770  86.115  1.00 20.51           N
ATOM   5735  CA  ARG B 356      -7.279  61.627  87.132  1.00 31.23           C
ATOM   5736  C   ARG B 356      -8.053  61.623  88.446  1.00 35.46           C
ATOM   5737  O   ARG B 356      -7.897  62.550  89.260  1.00 46.20           O
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ATOM   5738  CB  ARG B 356      -7.169  63.055  86.612  1.00 38.86           C
ATOM   5739  CG  ARG B 356      -6.047  63.244  85.616  1.00 43.53           C
ATOM   5740  CD  ARG B 356      -4.692  62.814  86.195  1.00 50.19           C
ATOM   5741  NE  ARG B 356      -4.092  63.775  87.134  1.00 59.43           N
ATOM   5742  CZ  ARG B 356      -3.703  65.010  86.815  1.00 63.12           C
ATOM   5743  NH1 ARG B 356      -3.850  65.459  85.575  1.00 65.44           N
ATOM   5744  NH2 ARG B 356      -3.147  65.793  87.730  1.00 62.05           N
ATOM   5745  N   GLN B 357      -8.870  60.592  88.673  1.00 28.87           N
ATOM   5746  CA  GLN B 357      -9.633  60.512  89.928  1.00 33.47           C
ATOM   5747  C   GLN B 357      -8.962  59.676  91.039  1.00 30.43           C
ATOM   5748  O   GLN B 357      -9.178  58.469  91.159  1.00 36.76           O
ATOM   5749  CB  GLN B 357     -11.035  59.986  89.645  1.00 40.97           C
ATOM   5750  CG  GLN B 357     -11.891  59.925  90.876  1.00 54.27           C
ATOM   5751  CD  GLN B 357     -13.338  60.217  90.596  1.00 62.67           C
ATOM   5752  OE1 GLN B 357     -13.673  61.300  90.143  1.00 69.07           O
ATOM   5753  NE2 GLN B 357     -14.205  59.251  90.854  1.00 65.72           N
ATOM   5754  N   GLU B 358      -8.155  60.350  91.849  1.00 26.80           N
ATOM   5755  CA  GLU B 358      -7.399  59.741  92.948  1.00 32.29           C
ATOM   5756  C   GLU B 358      -8.125  58.769  93.898  1.00 28.60           C
ATOM   5757  O   GLU B 358      -7.482  57.963  94.573  1.00 30.41           O
ATOM   5758  CB  GLU B 358      -6.779  60.857  93.797  1.00 43.79           C
ATOM   5759  CG  GLU B 358      -5.919  61.873  93.036  1.00 48.64           C
ATOM   5760  CD  GLU B 358      -4.510  61.379  92.749  1.00 44.93           C
ATOM   5761  OE1 GLU B 358      -3.894  60.773  93.649  1.00 42.30           O
ATOM   5762  OE2 GLU B 358      -4.012  61.616  91.629  1.00 40.88           O
ATOM   5763  N   ILE B 359      -9.448  58.848  93.968  1.00 27.88           N
ATOM   5764  CA  ILE B 359     -10.202  57.989  94.875  1.00 34.30           C
ATOM   5765  C   ILE B 359     -11.295  57.155  94.204  1.00 34.85           C
ATOM   5766  O   ILE B 359     -11.694  57.430  93.082  1.00 37.79           O
ATOM   5767  CB  ILE B 359     -10.827  58.840  96.002  1.00 39.33           C
ATOM   5768  CG1 ILE B 359     -11.420  57.935  97.086  1.00 31.29           C
ATOM   5769  CG2 ILE B 359     -11.877  59.774  95.420  1.00 43.50           C
ATOM   5770  CD1 ILE B 359     -11.978  58.692  98.238  1.00 40.02           C
ATOM   5771  N   GLY B 360     -11.764  56.123  94.897  1.00 39.25           N
ATOM   5772  CA  GLY B 360     -12.804  55.260  94.359  1.00 44.05           C
ATOM   5773  C   GLY B 360     -12.265  54.016  93.671  1.00 42.72           C
ATOM   5774  O   GLY B 360     -11.394  53.316  94.196  1.00 39.94           O
ATOM   5775  N   GLY B 361     -12.795  53.733  92.488  1.00 46.69           N
ATOM   5776  CA  GLY B 361     -12.347  52.574  91.742  1.00 49.53           C
ATOM   5777  C   GLY B 361     -12.208  52.907  90.269  1.00 52.50           C
ATOM   5778  O   GLY B 361     -12.057  54.085  89.923  1.00 62.49           O
ATOM   5779  N   PRO B 362     -12.257  51.898  89.378  1.00 48.87           N
ATOM   5780  CA  PRO B 362     -12.136  52.099  87.938  1.00 44.58           C
ATOM   5781  C   PRO B 362     -13.434  52.656  87.376  1.00 42.25           C
ATOM   5782  O   PRO B 362     -14.472  52.010  87.469  1.00 43.66           O
ATOM   5783  CB  PRO B 362     -11.847  50.693  87.425  1.00 43.79           C
ATOM   5784  CG  PRO B 362     -12.723  49.871  88.278  1.00 41.53           C
ATOM   5785  CD  PRO B 362     -12.502  50.474  89.669  1.00 48.21           C
ATOM   5786  N   ARG B 363     -13.371  53.854  86.803  1.00 41.38           N
ATOM   5787  CA  ARG B 363     -14.551  54.477  86.236  1.00 46.33           C
ATOM   5788  C   ARG B 363     -14.622  54.077  84.783  1.00 45.49           C
ATOM   5789  O   ARG B 363     -13.739  53.375  84.299  1.00 51.49           O
ATOM   5790  CB  ARG B 363     -14.458  55.991  86.422  1.00 54.78           C
ATOM   5791  CG  ARG B 363     -14.145  56.315  87.872  1.00 63.13           C
ATOM   5792  CD  ARG B 363     -14.508  57.715  88.292  1.00 53.78           C
ATOM   5793  NE  ARG B 363     -13.570  58.711  87.803  1.00 41.54           N
ATOM   5794  CZ  ARG B 363     -13.743  59.405  86.689  1.00 31.79           C
ATOM   5795  NH1 ARG B 363     -14.818  59.209  85.943  1.00 17.21           N
ATOM   5796  NH2 ARG B 363     -12.856  60.317  86.336  1.00 43.49           N
ATOM   5797  N   SER B 364     -15.669  54.479  84.079  1.00 44.85           N
ATOM   5798  CA  SER B 364     -15.755  54.114  82.672  1.00 49.86           C
ATOM   5799  C   SER B 364     -15.912  55.371  81.838  1.00 53.15           C
ATOM   5800  O   SER B 364     -16.669  56.272  82.203  1.00 62.86           O
ATOM   5801  CB  SER B 364     -16.929  53.162  82.428  1.00 45.42           C
ATOM   5802  OG  SER B 364     -18.156  53.755  82.803  1.00 51.36           O
ATOM   5803  N   TYR B 365     -15.166  55.441  80.740  1.00 54.75           N
ATOM   5804  CA  TYR B 365     -15.238  56.584  79.850  1.00 55.94           C
ATOM   5805  C   TYR B 365     -15.648  56.093  78.457  1.00 56.83           C
ATOM   5806  O   TYR B 365     -15.192  55.038  77.988  1.00 58.68           O
ATOM   5807  CB  TYR B 365     -13.893  57.319  79.786  1.00 55.40           C
ATOM   5808  CG  TYR B 365     -14.018  58.685  79.157  1.00 60.79           C
ATOM   5809  CD1 TYR B 365     -14.730  59.699  79.795  1.00 65.68           C
ATOM   5810  CD2 TYR B 365     -13.479  58.950  77.892  1.00 56.75           C
ATOM   5811  CE1 TYR B 365     -14.911  60.947  79.190  1.00 65.13           C
ATOM   5812  CE2 TYR B 365     -13.651  60.194  77.279  1.00 58.15           C
ATOM   5813  CZ  TYR B 365     -14.370  61.190  77.933  1.00 63.09           C
ATOM   5814  OH  TYR B 365     -14.553  62.424  77.337  1.00 65.91           O
ATOM   5815  N   THR B 366     -16.511  56.871  77.807  1.00 55.80           N
ATOM   5816  CA  THR B 366     -17.028  56.539  76.490  1.00 52.06           C
ATOM   5817  C   THR B 366     -16.975  57.753  75.584  1.00 49.80           C
ATOM   5818  O   THR B 366     -17.385  58.838  75.986  1.00 52.16           O
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ATOM   5819  CB  THR B 366     -18.489  56.112  76.597  1.00 53.56           C
ATOM   5820  OG1 THR B 366     -19.228  57.135  77.280  1.00 58.14           O
ATOM   5821  CG2 THR B 366     -18.611  54.836  77.381  1.00 53.03           C
ATOM   5822  N   ILE B 367     -16.475  57.581  74.364  1.00 46.90           N
ATOM   5823  CA  ILE B 367     -16.403  58.695  73.406  1.00 53.96           C
ATOM   5824  C   ILE B 367     -16.819  58.320  71.997  1.00 52.93           C
ATOM   5825  O   ILE B 367     -16.926  57.139  71.659  1.00 53.28           O
ATOM   5826  CB  ILE B 367     -14.985  59.305  73.272  1.00 58.74           C
ATOM   5827  CG1 ILE B 367     -13.924  58.202  73.250  1.00 58.91           C
ATOM   5828  CG2 ILE B 367     -14.767  60.342  74.351  1.00 63.43           C
ATOM   5829  CD1 ILE B 367     -13.997  57.279  72.051  1.00 50.07           C
ATOM   5830  N   ALA B 368     -17.027  59.345  71.173  1.00 59.91           N
ATOM   5831  CA  ALA B 368     -17.417  59.149  69.781  1.00 62.43           C
ATOM   5832  C   ALA B 368     -16.222  58.775  68.898  1.00 57.88           C
ATOM   5833  O   ALA B 368     -15.451  59.640  68.465  1.00 57.96           O
ATOM   5834  CB  ALA B 368     -18.088  60.410  69.245  1.00 73.79           C
ATOM   5835  N   VAL B 369     -16.074  57.477  68.662  1.00 51.51           N
ATOM   5836  CA  VAL B 369     -15.015  56.957  67.826  1.00 49.72           C
ATOM   5837  C   VAL B 369     -14.660  57.962  66.746  1.00 50.98           C
ATOM   5838  O   VAL B 369     -13.489  58.237  66.484  1.00 50.73           O
ATOM   5839  CB  VAL B 369     -15.474  55.652  67.166  1.00 54.09           C
ATOM   5840  CG1 VAL B 369     -14.505  55.219  66.093  1.00 56.99           C
ATOM   5841  CG2 VAL B 369     -15.619  54.588  68.218  1.00 61.48           C
ATOM   5842  N   ALA B 370     -15.692  58.513  66.124  1.00 54.79           N
ATOM   5843  CA  ALA B 370     -15.525  59.492  65.057  1.00 59.90           C
ATOM   5844  C   ALA B 370     -14.701  60.706  65.479  1.00 55.69           C
ATOM   5845  O   ALA B 370     -13.558  60.871  65.058  1.00 59.19           O
ATOM   5846  CB  ALA B 370     -16.897  59.944  64.563  1.00 69.60           C
ATOM   5847  N   SER B 371     -15.289  61.548  66.318  1.00 48.90           N
ATOM   5848  CA  SER B 371     -14.619  62.747  66.783  1.00 48.25           C
ATOM   5849  C   SER B 371     -13.358  62.423  67.593  1.00 44.02           C
ATOM   5850  O   SER B 371     -13.095  63.035  68.629  1.00 46.23           O
ATOM   5851  CB  SER B 371     -15.584  63.599  67.623  1.00 56.08           C
ATOM   5852  OG  SER B 371     -15.871  62.996  68.880  1.00 58.94           O
ATOM   5853  N   LEU B 372     -12.582  61.456  67.116  1.00 40.16           N
ATOM   5854  CA  LEU B 372     -11.341  61.088  67.780  1.00 38.78           C
ATOM   5855  C   LEU B 372     -10.120  61.503  66.958  1.00 41.62           C
ATOM   5856  O   LEU B 372      -9.564  62.587  67.158  1.00 47.58           O
ATOM   5857  CB  LEU B 372     -11.301  59.578  68.039  1.00 37.09           C
ATOM   5858  CG  LEU B 372     -10.124  59.082  68.900  1.00 30.31           C
ATOM   5859  CD1 LEU B 372     -10.025  59.910  70.177  1.00 31.09           C
ATOM   5860  CD2 LEU B 372     -10.307  57.613  69.249  1.00 19.07           C
ATOM   5861  N   GLY B 373      -9.709  60.637  66.035  1.00 40.17           N
ATOM   5862  CA  GLY B 373      -8.552  60.924  65.202  1.00 46.24           C
ATOM   5863  C   GLY B 373      -8.841  62.101  64.298  1.00 49.50           C
ATOM   5864  O   GLY B 373      -8.789  61.984  63.081  1.00 40.52           O
ATOM   5865  N   LYS B 374      -9.135  63.243  64.909  1.00 58.63           N
ATOM   5866  CA  LYS B 374      -9.455  64.466  64.191  1.00 64.48           C
ATOM   5867  C   LYS B 374     -10.535  64.197  63.172  1.00 66.08           C
ATOM   5868  O   LYS B 374     -10.728  64.986  62.253  1.00 68.10           O
ATOM   5869  CB  LYS B 374      -8.209  65.027  63.496  1.00 64.15           C
ATOM   5870  CG  LYS B 374      -7.864  66.432  63.942  1.00 72.20           C
ATOM   5871  CD  LYS B 374      -6.431  66.800  63.593  1.00 72.70           C
ATOM   5872  CE  LYS B 374      -6.034  68.156  64.184  1.00 77.53           C
ATOM   5873  NZ  LYS B 374      -6.075  68.198  65.684  1.00 72.68           N
ATOM   5874  N   GLY B 375     -11.233  63.078  63.349  1.00 66.41           N
ATOM   5875  CA  GLY B 375     -12.292  62.693  62.434  1.00 62.04           C
ATOM   5876  C   GLY B 375     -11.839  61.672  61.405  1.00 60.69           C
ATOM   5877  O   GLY B 375     -12.635  60.857  60.940  1.00 61.43           O
ATOM   5878  N   VAL B 376     -10.555  61.718  61.058  1.00 58.18           N
ATOM   5879  CA  VAL B 376      -9.959  60.815  60.078  1.00 57.67           C
ATOM   5880  C   VAL B 376      -9.950  59.361  60.521  1.00 61.90           C
ATOM   5881  O   VAL B 376     -10.806  58.585  60.107  1.00 71.76           O
ATOM   5882  CB  VAL B 376      -8.509  61.216  59.756  1.00 51.56           C
ATOM   5883  CG1 VAL B 376      -7.872  60.178  58.856  1.00 54.68           C
ATOM   5884  CG2 VAL B 376      -8.488  62.566  59.082  1.00 63.57           C
ATOM   5885  N   ALA B 377      -8.971  58.989  61.344  1.00 57.39           N
ATOM   5886  CA  ALA B 377      -8.873  57.621  61.828  1.00 54.98           C
ATOM   5887  C   ALA B 377     -10.246  57.209  62.316  1.00 57.77           C
ATOM   5888  O   ALA B 377     -10.799  57.825  63.224  1.00 58.49           O
ATOM   5889  CB  ALA B 377      -7.871  57.541  62.944  1.00 46.92           C
ATOM   5890  N   CYS B 378     -10.781  56.166  61.690  1.00 59.13           N
ATOM   5891  CA  CYS B 378     -12.109  55.624  61.982  1.00 63.50           C
ATOM   5892  C   CYS B 378     -13.079  55.952  60.868  1.00 66.64           C
ATOM   5893  O   CYS B 378     -14.303  55.884  61.041  1.00 72.37           O
ATOM   5894  CB  CYS B 378     -12.660  56.162  63.290  1.00 66.01           C
ATOM   5895  SG  CYS B 378     -11.718  55.523  64.708  1.00 88.55           S
ATOM   5896  N   ASN B 379     -12.519  56.313  59.716  1.00 66.49           N
ATOM   5897  CA  ASN B 379     -13.304  56.641  58.523  1.00 65.90           C
ATOM   5898  C   ASN B 379     -12.754  55.783  57.384  1.00 64.13           C
ATOM   5899  O   ASN B 379     -11.690  56.061  56.844  1.00 61.36           O
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ATOM   5900  CB  ASN B 379     -13.142  58.118  58.184  1.00 70.43           C
ATOM   5901  CG  ASN B 379     -14.141  58.591  57.153  1.00 77.67           C
ATOM   5902  OD1 ASN B 379     -15.339  58.673  57.422  1.00 83.76           O
ATOM   5903  ND2 ASN B 379     -13.657  58.888  55.956  1.00 79.95           N
ATOM   5904  N   PRO B 380     -13.471  54.711  57.023  1.00 67.27           N
ATOM   5905  CA  PRO B 380     -14.742  54.268  57.607  1.00 73.01           C
ATOM   5906  C   PRO B 380     -14.578  53.382  58.854  1.00 75.60           C
ATOM   5907  O   PRO B 380     -15.208  53.604  59.891  1.00 81.41           O
ATOM   5908  CB  PRO B 380     -15.391  53.513  56.451  1.00 76.77           C
ATOM   5909  CG  PRO B 380     -14.213  52.835  55.823  1.00 75.92           C
ATOM   5910  CD  PRO B 380     -13.122  53.883  55.858  1.00 67.18           C
ATOM   5911  N   ALA B 381     -13.693  52.394  58.742  1.00 72.14           N
ATOM   5912  CA  ALA B 381     -13.406  51.442  59.818  1.00 70.13           C
ATOM   5913  C   ALA B 381     -12.163  51.751  60.659  1.00 68.84           C
ATOM   5914  O   ALA B 381     -11.176  52.278  60.163  1.00 60.19           O
ATOM   5915  CB  ALA B 381     -13.287  50.038  59.228  1.00 75.02           C
ATOM   5916  N   CYS B 382     -12.227  51.388  61.936  1.00 71.46           N
ATOM   5917  CA  CYS B 382     -11.132  51.594  62.870  1.00 71.39           C
ATOM   5918  C   CYS B 382     -10.856  50.319  63.596  1.00 68.84           C
ATOM   5919  O   CYS B 382     -11.741  49.779  64.254  1.00 72.06           O
ATOM   5920  CB  CYS B 382     -11.486  52.640  63.920  1.00 75.13           C
ATOM   5921  SG  CYS B 382     -10.471  54.142  63.895  1.00 80.32           S
ATOM   5922  N   PHE B 383      -9.634  49.830  63.498  1.00 63.36           N
ATOM   5923  CA  PHE B 383      -9.328  48.624  64.232  1.00 61.05           C
ATOM   5924  C   PHE B 383      -8.533  49.057  65.453  1.00 54.93           C
ATOM   5925  O   PHE B 383      -7.405  49.531  65.330  1.00 55.67           O
ATOM   5926  CB  PHE B 383      -8.534  47.636  63.387  1.00 70.41           C
ATOM   5927  CG  PHE B 383      -8.450  46.264  64.004  1.00 83.99           C
ATOM   5928  CD1 PHE B 383      -9.587  45.650  64.527  1.00 87.52           C
ATOM   5929  CD2 PHE B 383      -7.248  45.574  64.036  1.00 96.23           C
ATOM   5930  CE1 PHE B 383      -9.520  44.380  65.088  1.00 98.04           C
ATOM   5931  CE2 PHE B 383      -7.168  44.299  64.595  1.00103.16           C
ATOM   5932  CZ  PHE B 383      -8.311  43.700  65.113  1.00103.83           C
ATOM   5933  N   ILE B 384      -9.141  48.900  66.624  1.00 48.57           N
ATOM   5934  CA  ILE B 384      -8.516  49.297  67.867  1.00 45.07           C
ATOM   5935  C   ILE B 384      -8.029  48.124  68.677  1.00 48.37           C
ATOM   5936  O   ILE B 384      -8.790  47.219  69.009  1.00 51.85           O
ATOM   5937  CB  ILE B 384      -9.494  50.062  68.742  1.00 48.28           C
ATOM   5938  CG1 ILE B 384     -10.259  51.056  67.887  1.00 48.39           C
ATOM   5939  CG2 ILE B 384      -8.747  50.769  69.862  1.00 55.97           C
ATOM   5940  CD1 ILE B 384     -11.433  51.663  68.581  1.00 53.13           C
ATOM   5941  N   THR B 385      -6.757  48.152  69.019  1.00 49.48           N
ATOM   5942  CA  THR B 385      -6.202  47.085  69.807  1.00 48.02           C
ATOM   5943  C   THR B 385      -5.663  47.726  71.080  1.00 42.47           C
ATOM   5944  O   THR B 385      -4.704  48.508  71.034  1.00 46.44           O
ATOM   5945  CB  THR B 385      -5.064  46.374  69.025  1.00 51.77           C
ATOM   5946  OG1 THR B 385      -3.884  47.189  69.016  1.00 60.29           O
ATOM   5947  CG2 THR B 385      -5.478  46.134  67.568  1.00 51.29           C
ATOM   5948  N   GLN B 386      -6.299  47.436  72.214  1.00 33.49           N
ATOM   5949  CA  GLN B 386      -5.819  48.012  73.468  1.00 27.25           C
ATOM   5950  C   GLN B 386      -4.364  47.633  73.517  1.00 30.82           C
ATOM   5951  O   GLN B 386      -4.022  46.471  73.370  1.00 43.33           O
ATOM   5952  CB  GLN B 386      -6.537  47.442  74.691  1.00 19.21           C
ATOM   5953  CG  GLN B 386      -6.116  48.141  75.964  1.00 29.27           C
ATOM   5954  CD  GLN B 386      -6.988  47.796  77.157  1.00 37.90           C
ATOM   5955  OE1 GLN B 386      -6.554  47.102  78.062  1.00 39.89           O
ATOM   5956  NE2 GLN B 386      -8.224  48.281  77.158  1.00 34.21           N
ATOM   5957  N   LEU B 387      -3.495  48.615  73.677  1.00 27.39           N
ATOM   5958  CA  LEU B 387      -2.080  48.313  73.699  1.00 18.51           C
ATOM   5959  C   LEU B 387      -1.580  48.409  75.117  1.00 22.23           C
ATOM   5960  O   LEU B 387      -0.413  48.123  75.387  1.00 28.65           O
ATOM   5961  CB  LEU B 387      -1.329  49.294  72.796  1.00 14.64           C
ATOM   5962  CG  LEU B 387      -0.052  48.767  72.147  1.00 20.38           C
ATOM   5963  CD1 LEU B 387      -0.378  47.537  71.320  1.00 23.24           C
ATOM   5964  CD2 LEU B 387       0.559  49.836  71.259  1.00 31.00           C
ATOM   5965  N   LEU B 388      -2.483  48.802  76.019  1.00 21.17           N
ATOM   5966  CA  LEU B 388      -2.172  48.986  77.446  1.00 19.64           C
ATOM   5967  C   LEU B 388      -3.451  49.247  78.251  1.00 19.25           C
ATOM   5968  O   LEU B 388      -4.398  49.874  77.769  1.00 21.14           O
ATOM   5969  CB  LEU B 388      -1.208  50.163  77.625  1.00 21.16           C
ATOM   5970  CG  LEU B 388       0.184  49.979  78.220  1.00 17.52           C
ATOM   5971  CD1 LEU B 388       0.726  48.600  77.929  1.00 12.74           C
ATOM   5972  CD2 LEU B 388       1.098  51.056  77.638  1.00 21.55           C
ATOM   5973  N   PRO B 389      -3.468  48.827  79.516  1.00 20.41           N
ATOM   5974  CA  PRO B 389      -2.386  48.117  80.203  1.00 33.25           C
ATOM   5975  C   PRO B 389      -2.324  46.606  79.934  1.00 41.99           C
ATOM   5976  O   PRO B 389      -1.639  45.883  80.649  1.00 48.41           O
ATOM   5977  CB  PRO B 389      -2.695  48.413  81.657  1.00 35.42           C
ATOM   5978  CG  PRO B 389      -4.191  48.283  81.687  1.00 28.80           C
ATOM   5979  CD  PRO B 389      -4.622  49.026  80.413  1.00 19.85           C
ATOM   5980  N   VAL B 390      -3.007  46.124  78.897  1.00 45.28           N
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ATOM   5981  CA  VAL B 390      -3.011  44.686  78.647  1.00 50.03           C
ATOM   5982  C   VAL B 390      -3.034  44.223  77.197  1.00 56.62           C
ATOM   5983  O   VAL B 390      -3.369  43.075  76.904  1.00 61.87           O
ATOM   5984  CB  VAL B 390      -4.186  44.036  79.370  1.00 48.80           C
ATOM   5985  CG1 VAL B 390      -4.098  44.301  80.849  1.00 42.23           C
ATOM   5986  CG2 VAL B 390      -5.479  44.604  78.813  1.00 53.36           C
ATOM   5987  N   LYS B 391      -2.657  45.098  76.283  1.00 59.77           N
ATOM   5988  CA  LYS B 391      -2.647  44.723  74.870  1.00 60.79           C
ATOM   5989  C   LYS B 391      -3.673  43.649  74.510  1.00 56.27           C
ATOM   5990  O   LYS B 391      -3.330  42.473  74.361  1.00 51.28           O
ATOM   5991  CB  LYS B 391      -1.251  44.248  74.446  1.00 60.41           C
ATOM   5992  CG  LYS B 391      -1.102  44.083  72.920  1.00 65.59           C
ATOM   5993  CD  LYS B 391       0.300  43.695  72.407  1.00 67.80           C
ATOM   5994  CE  LYS B 391       0.479  43.992  70.897  1.00 68.90           C
ATOM   5995  NZ  LYS B 391       0.432  42.704  70.094  1.00 67.32           N
ATOM   5996  N   ARG B 392      -4.931  44.070  74.395  1.00 55.13           N
ATOM   5997  CA  ARG B 392      -6.023  43.182  74.036  1.00 55.86           C
ATOM   5998  C   ARG B 392      -6.479  43.580  72.628  1.00 54.10           C
ATOM   5999  O   ARG B 392      -6.277  44.716  72.191  1.00 54.13           O
ATOM   6000  CB  ARG B 392      -7.180  43.342  75.023  1.00 64.65           C
ATOM   6001  CG  ARG B 392      -8.006  42.078  75.224  1.00 78.88           C
ATOM   6002  CD  ARG B 392      -9.451  42.397  75.614  1.00 87.47           C
ATOM   6003  NE  ARG B 392      -9.546  43.414  76.664  1.00 98.24           N
ATOM   6004  CZ  ARG B 392      -9.077  43.272  77.903  1.00102.06           C
ATOM   6005  NH1 ARG B 392      -8.475  42.148  78.263  1.00104.13           N
ATOM   6006  NH2 ARG B 392      -9.201  44.260  78.784  1.00102.28           N
ATOM   6007  N   LYS B 393      -7.122  42.651  71.933  1.00 56.38           N
ATOM   6008  CA  LYS B 393      -7.587  42.894  70.574  1.00 57.73           C
ATOM   6009  C   LYS B 393      -9.068  43.246  70.506  1.00 62.23           C
ATOM   6010  O   LYS B 393      -9.912  42.361  70.385  1.00 70.67           O
ATOM   6011  CB  LYS B 393      -7.336  41.656  69.717  1.00 60.70           C
ATOM   6012  CG  LYS B 393      -6.324  41.828  68.591  1.00 64.98           C
ATOM   6013  CD  LYS B 393      -6.131  40.503  67.865  1.00 69.41           C
ATOM   6014  CE  LYS B 393      -4.949  40.549  66.911  1.00 66.84           C
ATOM   6015  NZ  LYS B 393      -4.704  39.218  66.285  1.00 71.48           N
ATOM   6016  N   LEU B 394      -9.392  44.531  70.581  1.00 59.79           N
ATOM   6017  CA  LEU B 394     -10.791  44.944  70.499  1.00 57.57           C
ATOM   6018  C   LEU B 394     -11.208  44.787  69.049  1.00 60.43           C
ATOM   6019  O   LEU B 394     -10.345  44.726  68.174  1.00 65.60           O
ATOM   6020  CB  LEU B 394     -10.917  46.388  70.946  1.00 54.96           C
ATOM   6021  CG  LEU B 394     -10.267  46.558  72.318  1.00 52.67           C
ATOM   6022  CD1 LEU B 394     -10.265  48.016  72.704  1.00 60.31           C
ATOM   6023  CD2 LEU B 394     -11.018  45.729  73.341  1.00 64.58           C
ATOM   6024  N   GLY B 395     -12.511  44.729  68.784  1.00 64.48           N
ATOM   6025  CA  GLY B 395     -12.971  44.551  67.409  1.00 72.78           C
ATOM   6026  C   GLY B 395     -12.821  45.719  66.438  1.00 71.45           C
ATOM   6027  O   GLY B 395     -12.020  46.629  66.660  1.00 75.01           O
ATOM   6028  N   PHE B 396     -13.578  45.677  65.340  1.00 67.34           N
ATOM   6029  CA  PHE B 396     -13.554  46.742  64.331  1.00 64.20           C
ATOM   6030  C   PHE B 396     -14.505  47.844  64.784  1.00 55.21           C
ATOM   6031  O   PHE B 396     -15.501  47.572  65.441  1.00 57.53           O
ATOM   6032  CB  PHE B 396     -14.028  46.216  62.968  1.00 82.65           C
ATOM   6033  CG  PHE B 396     -13.033  45.316  62.265  1.00102.32           C
ATOM   6034  CD1 PHE B 396     -12.184  45.818  61.281  1.00111.78           C
ATOM   6035  CD2 PHE B 396     -12.960  43.961  62.570  1.00109.39           C
ATOM   6036  CE1 PHE B 396     -11.276  44.985  60.615  1.00115.13           C
ATOM   6037  CE2 PHE B 396     -12.055  43.121  61.910  1.00113.01           C
ATOM   6038  CZ  PHE B 396     -11.216  43.635  60.930  1.00113.32           C
ATOM   6039  N   TYR B 397     -14.201  49.085  64.434  1.00 51.42           N
ATOM   6040  CA  TYR B 397     -15.059  50.198  64.807  1.00 57.23           C
ATOM   6041  C   TYR B 397     -15.357  51.085  63.607  1.00 61.72           C
ATOM   6042  O   TYR B 397     -14.452  51.486  62.879  1.00 60.46           O
ATOM   6043  CB  TYR B 397     -14.412  51.024  65.919  1.00 64.37           C
ATOM   6044  CG  TYR B 397     -14.472  50.359  67.274  1.00 77.41           C
ATOM   6045  CD1 TYR B 397     -13.654  49.276  67.584  1.00 86.02           C
ATOM   6046  CD2 TYR B 397     -15.385  50.790  68.236  1.00 87.56           C
ATOM   6047  CE1 TYR B 397     -13.746  48.633  68.823  1.00 95.71           C
ATOM   6048  CE2 TYR B 397     -15.490  50.158  69.478  1.00 92.49           C
ATOM   6049  CZ  TYR B 397     -14.669  49.078  69.766  1.00 96.36           C
ATOM   6050  OH  TYR B 397     -14.784  48.436  70.984  1.00 92.61           O
ATOM   6051  N   GLU B 398     -16.631  51.373  63.375  1.00 67.89           N
ATOM   6052  CA  GLU B 398     -16.990  52.224  62.253  1.00 76.13           C
ATOM   6053  C   GLU B 398     -16.839  53.649  62.682  1.00 74.01           C
ATOM   6054  O   GLU B 398     -16.544  53.937  63.844  1.00 75.69           O
ATOM   6055  CB  GLU B 398     -18.430  51.980  61.808  1.00 86.18           C
ATOM   6056  CG  GLU B 398     -18.589  50.683  61.075  1.00107.33           C
ATOM   6057  CD  GLU B 398     -17.867  49.567  61.790  1.00123.23           C
ATOM   6058  OE1 GLU B 398     -18.252  49.262  62.939  1.00129.75           O
ATOM   6059  OE2 GLU B 398     -16.904  49.013  61.217  1.00128.47           O
ATOM   6060  N   TRP B 399     -17.030  54.547  61.732  1.00 70.53           N
ATOM   6061  CA  TRP B 399     -16.924  55.953  62.032  1.00 69.74           C
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ATOM   6062  C   TRP B 399     -17.957  56.198  63.122  1.00 69.71           C
ATOM   6063  O   TRP B 399     -17.608  56.597  64.233  1.00 70.76           O
ATOM   6064  CB  TRP B 399     -17.228  56.778  60.783  1.00 68.11           C
ATOM   6065  CG  TRP B 399     -16.673  58.158  60.844  1.00 69.78           C
ATOM   6066  CD1 TRP B 399     -15.362  58.525  60.738  1.00 68.46           C
ATOM   6067  CD2 TRP B 399     -17.410  59.361  61.072  1.00 76.78           C
ATOM   6068  NE1 TRP B 399     -15.235  59.884  60.888  1.00 71.48           N
ATOM   6069  CE2 TRP B 399     -16.479  60.423  61.095  1.00 78.32           C
ATOM   6070  CE3 TRP B 399     -18.772  59.647  61.264  1.00 85.58           C
ATOM   6071  CZ2 TRP B 399     -16.867  61.755  61.304  1.00 86.28           C
ATOM   6072  CZ3 TRP B 399     -19.160  60.974  61.473  1.00 89.12           C
ATOM   6073  CH2 TRP B 399     -18.209  62.009  61.491  1.00 91.47           C
ATOM   6074  N   THR B 400     -19.222  55.911  62.816  1.00 68.79           N
ATOM   6075  CA  THR B 400     -20.306  56.105  63.784  1.00 74.00           C
ATOM   6076  C   THR B 400     -19.941  55.562  65.162  1.00 77.61           C
ATOM   6077  O   THR B 400     -20.103  56.252  66.173  1.00 85.51           O
ATOM   6078  CB  THR B 400     -21.608  55.403  63.336  1.00 72.03           C
ATOM   6079  OG1 THR B 400     -21.284  54.169  62.681  1.00 78.00           O
ATOM   6080  CG2 THR B 400     -22.412  56.297  62.406  1.00 71.81           C
ATOM   6081  N   SER B 401     -19.443  54.325  65.169  1.00 75.75           N
ATOM   6082  CA  SER B 401     -19.037  53.592  66.370  1.00 71.37           C
ATOM   6083  C   SER B 401     -18.803  54.403  67.649  1.00 64.98           C
ATOM   6084  O   SER B 401     -18.296  55.530  67.605  1.00 66.87           O
ATOM   6085  CB  SER B 401     -17.783  52.763  66.064  1.00 79.12           C
ATOM   6086  OG  SER B 401     -18.066  51.735  65.133  1.00 93.93           O
ATOM   6087  N   ARG B 402     -19.185  53.814  68.785  1.00 58.91           N
ATOM   6088  CA  ARG B 402     -19.010  54.440  70.097  1.00 60.47           C
ATOM   6089  C   ARG B 402     -18.072  53.555  70.926  1.00 60.73           C
ATOM   6090  O   ARG B 402     -18.393  52.403  71.217  1.00 65.99           O
ATOM   6091  CB  ARG B 402     -20.356  54.571  70.821  1.00 56.93           C
ATOM   6092  CG  ARG B 402     -20.735  55.997  71.206  1.00 67.01           C
ATOM   6093  CD  ARG B 402     -21.916  56.011  72.174  1.00 79.70           C
ATOM   6094  NE  ARG B 402     -22.307  57.362  72.592  1.00 93.49           N
ATOM   6095  CZ  ARG B 402     -21.562  58.171  73.345  1.00 97.84           C
ATOM   6096  NH1 ARG B 402     -20.369  57.780  73.777  1.00102.38           N
ATOM   6097  NH2 ARG B 402     -22.012  59.375  73.673  1.00100.40           N
ATOM   6098  N   LEU B 403     -16.906  54.083  71.294  1.00 58.80           N
ATOM   6099  CA  LEU B 403     -15.962  53.308  72.094  1.00 54.80           C
ATOM   6100  C   LEU B 403     -16.064  53.611  73.580  1.00 58.34           C
ATOM   6101  O   LEU B 403     -15.994  54.765  74.020  1.00 61.62           O
ATOM   6102  CB  LEU B 403     -14.519  53.527  71.641  1.00 56.95           C
ATOM   6103  CG  LEU B 403     -13.565  52.637  72.445  1.00 59.29           C
ATOM   6104  CD1 LEU B 403     -14.093  51.221  72.409  1.00 66.38           C
ATOM   6105  CD2 LEU B 403     -12.159  52.689  71.894  1.00 60.54           C
ATOM   6106  N   ARG B 404     -16.241  52.543  74.343  1.00 61.81           N
ATOM   6107  CA  ARG B 404     -16.368  52.617  75.787  1.00 64.91           C
ATOM   6108  C   ARG B 404     -15.286  51.789  76.448  1.00 62.09           C
ATOM   6109  O   ARG B 404     -14.918  50.715  75.957  1.00 62.39           O
ATOM   6110  CB  ARG B 404     -17.725  52.077  76.217  1.00 74.76           C
ATOM   6111  CG  ARG B 404     -17.807  51.740  77.694  1.00 87.75           C
ATOM   6112  CD  ARG B 404     -19.203  51.278  78.064  1.00101.27           C
ATOM   6113  NE  ARG B 404     -19.326  51.032  79.496  1.00111.43           N
ATOM   6114  CZ  ARG B 404     -20.483  50.864  80.125  1.00115.18           C
ATOM   6115  NH1 ARG B 404     -21.620  50.914  79.442  1.00121.83           N
ATOM   6116  NH2 ARG B 404     -20.504  50.658  81.436  1.00114.89           N
ATOM   6117  N   SER B 405     -14.790  52.274  77.576  1.00 59.43           N
ATOM   6118  CA  SER B 405     -13.762  51.544  78.274  1.00 62.10           C
ATOM   6119  C   SER B 405     -13.633  52.062  79.692  1.00 57.60           C
ATOM   6120  O   SER B 405     -13.913  53.223  79.965  1.00 63.06           O
ATOM   6121  CB  SER B 405     -12.436  51.691  77.531  1.00 66.47           C
ATOM   6122  OG  SER B 405     -11.509  50.688  77.932  1.00 72.72           O
ATOM   6123  N   HIS B 406     -13.209  51.182  80.591  1.00 49.38           N
ATOM   6124  CA  HIS B 406     -13.027  51.536  81.983  1.00 43.52           C
ATOM   6125  C   HIS B 406     -11.541  51.839  82.226  1.00 41.81           C
ATOM   6126  O   HIS B 406     -10.659  51.210  81.632  1.00 42.20           O
ATOM   6127  CB  HIS B 406     -13.485  50.386  82.879  1.00 48.35           C
ATOM   6128  CG  HIS B 406     -14.881  49.923  82.604  1.00 53.45           C
ATOM   6129  ND1 HIS B 406     -15.880  49.957  83.552  1.00 62.61           N
ATOM   6130  CD2 HIS B 406     -15.441  49.402  81.488  1.00 60.64           C
ATOM   6131  CE1 HIS B 406     -16.996  49.478  83.033  1.00 64.26           C
ATOM   6132  NE2 HIS B 406     -16.756  49.134  81.782  1.00 67.22           N
ATOM   6133  N   ILE B 407     -11.263  52.797  83.104  1.00 39.08           N
ATOM   6134  CA  ILE B 407      -9.888  53.193  83.419  1.00 41.63           C
ATOM   6135  C   ILE B 407      -9.629  53.263  84.934  1.00 43.98           C
ATOM   6136  O   ILE B 407     -10.368  53.929  85.665  1.00 56.43           O
ATOM   6137  CB  ILE B 407      -9.602  54.568  82.817  1.00 35.57           C
ATOM   6138  CG1 ILE B 407      -9.846  54.533  81.314  1.00 21.75           C
ATOM   6139  CG2 ILE B 407      -8.179  55.007  83.148  1.00 38.47           C
ATOM   6140  CD1 ILE B 407     -10.134  55.875  80.751  1.00 19.17           C
ATOM   6141  N   ASN B 408      -8.573  52.591  85.396  1.00 36.98           N
ATOM   6142  CA  ASN B 408      -8.236  52.579  86.830  1.00 25.77           C
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ATOM   6143  C   ASN B 408      -7.758  53.942  87.340  1.00 17.60           C
ATOM   6144  O   ASN B 408      -7.226  54.753  86.579  1.00  3.31           O
ATOM   6145  CB  ASN B 408      -7.142  51.535  87.143  1.00 29.76           C
ATOM   6146  CG  ASN B 408      -7.573  50.097  86.840  1.00 32.06           C
ATOM   6147  OD1 ASN B 408      -8.755  49.756  86.900  1.00 45.34           O
ATOM   6148  ND2 ASN B 408      -6.601  49.243  86.543  1.00 29.00           N
ATOM   6149  N   PRO B 409      -7.949  54.206  88.638  1.00 14.38           N
ATOM   6150  CA  PRO B 409      -7.522  55.477  89.225  1.00 29.19           C
ATOM   6151  C   PRO B 409      -6.031  55.712  88.995  1.00 28.58           C
ATOM   6152  O   PRO B 409      -5.221  54.817  89.236  1.00 25.09           O
ATOM   6153  CB  PRO B 409      -7.870  55.303  90.714  1.00 27.72           C
ATOM   6154  CG  PRO B 409      -9.109  54.488  90.668  1.00 19.87           C
ATOM   6155  CD  PRO B 409      -8.755  53.431  89.595  1.00 13.43           C
ATOM   6156  N   THR B 410      -5.682  56.917  88.542  1.00 25.64           N
ATOM   6157  CA  THR B 410      -4.297  57.314  88.274  1.00 21.41           C
ATOM   6158  C   THR B 410      -3.670  56.447  87.192  1.00 19.06           C
ATOM   6159  O   THR B 410      -2.483  56.569  86.894  1.00 20.31           O
ATOM   6160  CB  THR B 410      -3.390  57.249  89.550  1.00 22.26           C
ATOM   6161  OG1 THR B 410      -2.837  55.936  89.705  1.00 25.09           O
ATOM   6162  CG2 THR B 410      -4.193  57.590  90.795  1.00 26.29           C
ATOM   6163  N   GLY B 411      -4.477  55.568  86.604  1.00  9.30           N
ATOM   6164  CA  GLY B 411      -3.988  54.698  85.548  1.00 15.00           C
ATOM   6165  C   GLY B 411      -4.227  55.287  84.159  1.00 20.58           C
ATOM   6166  O   GLY B 411      -4.689  56.431  84.038  1.00 23.53           O
ATOM   6167  N   THR B 412      -3.927  54.505  83.114  1.00 26.18           N
ATOM   6168  CA  THR B 412      -4.098  54.954  81.735  1.00 25.29           C
ATOM   6169  C   THR B 412      -4.343  53.803  80.769  1.00 28.68           C
ATOM   6170  O   THR B 412      -3.698  52.764  80.874  1.00 34.15           O
ATOM   6171  CB  THR B 412      -2.847  55.702  81.244  1.00 18.21           C
ATOM   6172  OG1 THR B 412      -2.489  56.709  82.196  1.00 11.12           O
ATOM   6173  CG2 THR B 412      -3.108  56.351  79.892  1.00 23.07           C
ATOM   6174  N   VAL B 413      -5.280  53.986  79.838  1.00 26.41           N
ATOM   6175  CA  VAL B 413      -5.567  52.970  78.822  1.00 21.92           C
ATOM   6176  C   VAL B 413      -5.085  53.513  77.495  1.00 24.79           C
ATOM   6177  O   VAL B 413      -5.624  54.495  76.985  1.00 27.66           O
ATOM   6178  CB  VAL B 413      -7.064  52.669  78.687  1.00 21.57           C
ATOM   6179  CG1 VAL B 413      -7.299  51.808  77.455  1.00  8.29           C
ATOM   6180  CG2 VAL B 413      -7.567  51.969  79.942  1.00 24.91           C
ATOM   6181  N   LEU B 414      -4.061  52.871  76.948  1.00 28.47           N
ATOM   6182  CA  LEU B 414      -3.467  53.271  75.680  1.00 24.92           C
ATOM   6183  C   LEU B 414      -4.054  52.477  74.534  1.00 18.79           C
ATOM   6184  O   LEU B 414      -4.067  51.247  74.567  1.00 21.81           O
ATOM   6185  CB  LEU B 414      -1.965  53.043  75.728  1.00 26.69           C
ATOM   6186  CG  LEU B 414      -1.217  53.357  74.449  1.00 23.20           C
ATOM   6187  CD1 LEU B 414      -1.500  54.788  74.061  1.00 18.54           C
ATOM   6188  CD2 LEU B 414       0.263  53.126  74.666  1.00 23.23           C
ATOM   6189  N   LEU B 415      -4.537  53.189  73.522  1.00 17.41           N
ATOM   6190  CA  LEU B 415      -5.126  52.557  72.355  1.00 22.76           C
ATOM   6191  C   LEU B 415      -4.411  52.913  71.083  1.00 25.05           C
ATOM   6192  O   LEU B 415      -3.783  53.961  70.989  1.00 34.70           O
ATOM   6193  CB  LEU B 415      -6.567  52.993  72.210  1.00 26.86           C
ATOM   6194  CG  LEU B 415      -7.470  52.509  73.323  1.00 31.67           C
ATOM   6195  CD1 LEU B 415      -8.831  53.093  73.117  1.00 36.91           C
ATOM   6196  CD2 LEU B 415      -7.524  50.999  73.309  1.00 31.07           C
ATOM   6197  N   GLN B 416      -4.524  52.034  70.098  1.00 23.81           N
ATOM   6198  CA  GLN B 416      -3.936  52.272  68.787  1.00 33.37           C
ATOM   6199  C   GLN B 416      -4.960  51.970  67.718  1.00 36.57           C
ATOM   6200  O   GLN B 416      -5.472  50.852  67.633  1.00 40.97           O
ATOM   6201  CB  GLN B 416      -2.725  51.392  68.568  1.00 31.12           C
ATOM   6202  CG  GLN B 416      -2.138  51.548  67.203  1.00 42.89           C
ATOM   6203  CD  GLN B 416      -0.975  50.645  66.985  1.00 63.66           C
ATOM   6204  OE1 GLN B 416       0.082  50.834  67.590  1.00 72.11           O
ATOM   6205  NE2 GLN B 416      -1.158  49.631  66.134  1.00 73.16           N
ATOM   6206  N   LEU B 417      -5.250  52.976  66.901  1.00 39.62           N
ATOM   6207  CA  LEU B 417      -6.230  52.845  65.833  1.00 41.44           C
ATOM   6208  C   LEU B 417      -5.594  52.788  64.461  1.00 53.96           C
ATOM   6209  O   LEU B 417      -4.741  53.598  64.117  1.00 54.02           O
ATOM   6210  CB  LEU B 417      -7.202  54.022  65.860  1.00 26.40           C
ATOM   6211  CG  LEU B 417      -8.036  54.223  67.120  1.00 15.38           C
ATOM   6212  CD1 LEU B 417      -7.171  54.382  68.370  1.00 23.14           C
ATOM   6213  CD2 LEU B 417      -8.879  55.455  66.908  1.00 14.02           C
ATOM   6214  N   GLU B 418      -5.985  51.810  63.674  1.00 63.47           N
ATOM   6215  CA  GLU B 418      -5.456  51.767  62.348  1.00 73.65           C
ATOM   6216  C   GLU B 418      -6.658  51.917  61.447  1.00 76.75           C
ATOM   6217  O   GLU B 418      -7.775  51.539  61.808  1.00 78.62           O
ATOM   6218  CB  GLU B 418      -4.722  50.468  62.085  1.00 79.80           C
ATOM   6219  CG  GLU B 418      -3.697  50.630  60.993  1.00 93.59           C
ATOM   6220  CD  GLU B 418      -2.521  49.711  61.182  1.00105.77           C
ATOM   6221  OE1 GLU B 418      -2.731  48.476  61.225  1.00116.13           O
ATOM   6222  OE2 GLU B 418      -1.384  50.223  61.269  1.00110.78           O
ATOM   6223  N   ASN B 419      -6.446  52.498  60.279  1.00 76.36           N
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ATOM	6224	CA	ASN	B	419	-7.554	52.691	59.373	1.00 77.56	C
ATOM	6225	C	ASN	B	419	-7.653	51.563	58.356	1.00 75.57	C
ATOM	6226	O	ASN	B	419	-6.644	51.082	57.850	1.00 76.41	O
ATOM	6227	CB	ASN	B	419	-7.402	54.019	58.659	1.00 80.92	C
ATOM	6228	CG	ASN	B	419	-8.722	54.563	58.184	1.00 87.29	C
ATOM	6229	OD1	ASN	B	419	-9.483	53.872	57.516	1.00 93.45	O
ATOM	6230	ND2	ASN	B	419	-9.005	55.806	58.529	1.00 90.20	N
ATOM	6231	N	THR	B	420	-8.881	51.135	58.078	1.00 72.97	N
ATOM	6232	CA	THR	B	420	-9.149	50.072	57.109	1.00 71.00	C
ATOM	6233	C	THR	B	420	-10.561	50.193	56.538	1.00 73.41	C
ATOM	6234	O	THR	B	420	-11.200	51.239	56.644	1.00 75.04	O
ATOM	6235	CB	THR	B	420	-9.025	48.685	57.739	1.00 65.75	C
ATOM	6236	OG1	THR	B	420	-9.227	47.685	56.728	1.00 73.99	O
ATOM	6237	CG2	THR	B	420	-10.074	48.511	58.818	1.00 66.26	C
ATOM	6238	N	MET	B	421	-11.049	49.117	55.935	1.00 78.01	N
ATOM	6239	CA	MET	B	421	-12.389	49.129	55.380	1.00 86.83	C
ATOM	6240	C	MET	B	421	-12.964	47.723	55.227	1.00 96.12	C
ATOM	6241	O	MET	B	421	-13.164	47.257	54.108	1.00104.34	O
ATOM	6242	CB	MET	B	421	-12.382	49.872	54.040	1.00 81.61	C
ATOM	6243	CG	MET	B	421	-11.040	49.817	53.317	1.00 83.65	C
ATOM	6244	SD	MET	B	421	-10.943	50.900	51.858	1.00 91.96	S
ATOM	6245	CE	MET	B	421	-11.074	49.705	50.515	1.00 90.16	C
ATOM	6246	N	GLN	B	422	-13.225	47.055	56.357	1.00101.21	N
ATOM	6247	CA	GLN	B	422	-13.782	45.697	56.353	1.00105.85	C
ATOM	6248	C	GLN	B	422	-15.289	45.733	56.144	1.00105.71	C
ATOM	6249	O	GLN	B	422	-15.948	46.733	56.464	1.00102.36	O
ATOM	6250	CB	GLN	B	422	-13.464	44.958	57.667	1.00109.29	C
ATOM	6251	CG	GLN	B	422	-14.665	44.696	58.604	1.00113.03	C
ATOM	6252	CD	GLN	B	422	-15.131	45.945	59.342	1.00113.05	C
ATOM	6253	OE1	GLN	B	422	-15.985	45.875	60.229	1.00112.27	O
ATOM	6254	NE2	GLN	B	422	-14.572	47.095	58.974	1.00111.06	N
TER	6255		GLN	B	422					

CARBOHYDRATE CHAIN COORDINATES

		Atom Type	Resid		#	X	Y	Z	OCC	B	
HETATM	6256	C1	NAG	C	639	-32.139	70.260	111.421	1.00	93.92	C
HETATM	6257	C2	NAG	C	639	-31.372	70.776	112.654	1.00	94.66	C
HETATM	6258	C3	NAG	C	639	-32.395	71.419	113.614	1.00	105.94	C
HETATM	6259	C4	NAG	C	639	-33.146	72.575	112.930	1.00	114.46	C
HETATM	6260	C5	NAG	C	639	-33.784	72.042	111.627	1.00	107.11	C
HETATM	6261	C6	NAG	C	639	-34.515	73.102	110.785	1.00	97.36	C
HETATM	6262	C7	NAG	C	639	-29.410	69.784	113.650	1.00	76.09	C
HETATM	6263	C8	NAG	C	639	-28.791	68.583	114.346	1.00	73.90	C
HETATM	6264	N2	NAG	C	639	-30.692	69.680	113.316	1.00	82.50	N
HETATM	6265	O3	NAG	C	639	-31.749	71.900	114.788	1.00	109.09	O
HETATM	6266	O4	NAG	C	639	-34.179	73.041	113.838	1.00	133.02	O
HETATM	6267	O5	NAG	C	639	-32.786	71.385	110.776	1.00	102.97	O
HETATM	6268	O6	NAG	C	639	-33.625	73.991	110.106	1.00	77.29	O
HETATM	6269	O7	NAG	C	639	-28.729	70.781	113.413	1.00	70.04	O
HETATM	6270	C1	NAG	C	640	-34.150	74.359	114.302	1.00	153.89	C
HETATM	6271	C2	NAG	C	640	-35.587	74.805	114.601	1.00	166.52	C
HETATM	6272	C3	NAG	C	640	-35.618	76.231	115.204	1.00	170.69	C
HETATM	6273	C4	NAG	C	640	-34.667	76.327	116.408	1.00	168.92	C
HETATM	6274	C5	NAG	C	640	-33.280	75.765	116.018	1.00	161.95	C
HETATM	6275	C6	NAG	C	640	-32.308	75.700	117.183	1.00	160.78	C
HETATM	6276	C7	NAG	C	640	-37.045	73.626	113.082	1.00	184.26	C
HETATM	6277	C8	NAG	C	640	-37.817	73.610	111.757	1.00	186.48	C
HETATM	6278	N2	NAG	C	640	-36.355	74.732	113.369	1.00	177.27	N
HETATM	6279	O3	NAG	C	640	-36.939	76.577	115.610	1.00	176.07	O
HETATM	6280	O4	NAG	C	640	-34.554	77.690	116.847	1.00	170.55	O
HETATM	6281	O5	NAG	C	640	-33.393	74.412	115.512	1.00	154.03	O
HETATM	6282	O6	NAG	C	640	-30.979	75.509	116.704	1.00	154.47	O
HETATM	6283	O7	NAG	C	640	-37.087	72.644	113.846	1.00	186.30	O
HETATM	6284	C1	NAG	D	692	-23.139	49.197	129.143	1.00	48.04	C
HETATM	6285	C2	NAG	D	692	-22.646	47.835	128.624	1.00	53.62	C
HETATM	6286	C3	NAG	D	692	-21.983	46.992	129.733	1.00	58.82	C
HETATM	6287	C4	NAG	D	692	-20.947	47.850	130.489	1.00	55.73	C
HETATM	6288	C5	NAG	D	692	-21.627	49.122	130.984	1.00	52.32	C
HETATM	6289	C6	NAG	D	692	-20.721	50.042	131.773	1.00	52.91	C
HETATM	6290	C7	NAG	D	692	-23.755	46.768	126.787	1.00	55.64	C
HETATM	6291	C8	NAG	D	692	-24.966	46.029	126.241	1.00	65.81	C
HETATM	6292	N2	NAG	D	692	-23.774	47.119	128.066	1.00	53.61	N
HETATM	6293	O3	NAG	D	692	-21.350	45.863	129.141	1.00	57.40	O
HETATM	6294	O4	NAG	D	692	-20.353	47.134	131.595	1.00	60.58	O
HETATM	6295	O5	NAG	D	692	-22.091	49.866	129.852	1.00	43.36	O
HETATM	6296	O6	NAG	D	692	-19.356	49.747	131.529	1.00	68.08	O
HETATM	6297	O7	NAG	D	692	-22.800	47.009	126.053	1.00	56.23	O
HETATM	6298	C1	NAG	D	693	-19.152	46.510	131.295	1.00	73.01	C
HETATM	6299	C2	NAG	D	693	-18.235	46.423	132.534	1.00	75.04	C
HETATM	6300	C3	NAG	D	693	-16.939	45.698	132.133	1.00	84.71	C

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HETATM 6301  C4  NAG D 693     -17.268  44.337 131.492  1.00101.09           C
HETATM 6302  C5  NAG D 693     -18.298  44.494 130.357  1.00103.07           C
HETATM 6303  C6  NAG D 693     -18.792  43.169 129.810  1.00113.86           C
HETATM 6304  C7  NAG D 693     -18.788  48.418 133.800  1.00 79.96           C
HETATM 6305  C8  NAG D 693     -18.348  49.785 134.293  1.00 84.84           C
HETATM 6306  N2  NAG D 693     -17.917  47.743 133.052  1.00 74.50           N
HETATM 6307  O3  NAG D 693     -16.096  45.518 133.268  1.00 68.40           O
HETATM 6308  O4  NAG D 693     -16.069  43.756 130.948  1.00125.46           O
HETATM 6309  O5  NAG D 693     -19.460  45.196 130.824  1.00 83.65           O
HETATM 6310  O6  NAG D 693     -17.872  42.123 130.080  1.00132.47           O
HETATM 6311  O7  NAG D 693     -19.902  47.990 134.095  1.00 69.44           O
HETATM 6312  C1  MAN D 694     -15.378  42.863 131.757  1.00140.45           C
HETATM 6313  C2  MAN D 694     -14.749  41.758 130.880  1.00146.70           C
HETATM 6314  C3  MAN D 694     -13.858  40.839 131.720  1.00151.60           C
HETATM 6315  C4  MAN D 694     -12.833  41.691 132.472  1.00151.16           C
HETATM 6316  C5  MAN D 694     -13.537  42.798 133.296  1.00151.15           C
HETATM 6317  C6  MAN D 694     -12.576  43.755 133.981  1.00159.97           C
HETATM 6318  O2  MAN D 694     -13.992  42.335 129.829  1.00145.54           O
HETATM 6319  O3  MAN D 694     -13.189  39.865 130.891  1.00156.40           O
HETATM 6320  O4  MAN D 694     -12.068  40.865 133.333  1.00152.15           O
HETATM 6321  O5  MAN D 694     -14.358  43.607 132.435  1.00142.39           O
HETATM 6322  O6  MAN D 694     -11.225  43.477 133.559  1.00177.23           O
HETATM 6323  C1  MAN D 695     -10.712  44.461 132.700  1.00187.11           C
HETATM 6324  C2  MAN D 695     -10.548  43.889 131.286  1.00193.26           C
HETATM 6325  C3  MAN D 695      -9.530  42.744 131.302  1.00195.26           C
HETATM 6326  C4  MAN D 695      -8.207  43.192 131.937  1.00194.09           C
HETATM 6327  C5  MAN D 695      -8.433  43.909 133.278  1.00190.45           C
HETATM 6328  C6  MAN D 695      -7.185  44.609 133.750  1.00188.51           C
HETATM 6329  O2  MAN D 695     -10.092  44.914 130.416  1.00198.31           O
HETATM 6330  O3  MAN D 695      -9.291  42.313 129.973  1.00198.31           O
HETATM 6331  O4  MAN D 695      -7.387  42.058 132.152  1.00194.30           O
HETATM 6332  O5  MAN D 695      -9.447  44.936 133.148  1.00188.38           O
HETATM 6333  O6  MAN D 695      -7.047  45.878 133.118  1.00184.58           O
HETATM 6334  C1  MAN D 696     -13.765  38.597 130.905  1.00160.20           C
HETATM 6335  C2  MAN D 696     -12.677  37.513 131.050  1.00162.12           C
HETATM 6336  C3  MAN D 696     -11.913  37.332 129.740  1.00161.16           C
HETATM 6337  C4  MAN D 696     -12.888  37.039 128.611  1.00159.89           C
HETATM 6338  C5  MAN D 696     -13.914  38.170 128.510  1.00158.37           C
HETATM 6339  C6  MAN D 696     -14.969  37.903 127.452  1.00154.56           C
HETATM 6340  O2  MAN D 696     -13.303  36.281 131.399  1.00165.74           O
HETATM 6341  O3  MAN D 696     -10.987  36.268 129.885  1.00161.13           O
HETATM 6342  O4  MAN D 696     -12.184  36.909 127.386  1.00155.90           O
HETATM 6343  O5  MAN D 696     -14.606  38.341 129.770  1.00160.32           O
HETATM 6344  O6  MAN D 696     -15.435  36.565 127.516  1.00146.85           O
HETATM 6345  C1  NAG E 715     -13.182  66.020 129.888  1.00120.37           C
HETATM 6346  C2  NAG E 715     -12.899  67.060 130.965  1.00123.71           C
HETATM 6347  C3  NAG E 715     -12.596  66.358 132.294  1.00133.37           C
HETATM 6348  C4  NAG E 715     -13.650  65.298 132.649  1.00139.25           C
HETATM 6349  C5  NAG E 715     -13.975  64.405 131.442  1.00137.63           C
HETATM 6350  C6  NAG E 715     -15.186  63.543 131.714  1.00140.83           C
HETATM 6351  C7  NAG E 715     -11.829  69.189 130.601  1.00109.30           C
HETATM 6352  C8  NAG E 715     -10.593  69.942 130.149  1.00108.45           C
HETATM 6353  N2  NAG E 715     -11.766  67.865 130.552  1.00113.83           N
HETATM 6354  O3  NAG E 715     -12.541  67.322 133.330  1.00132.54           O
HETATM 6355  O4  NAG E 715     -13.185  64.484 133.758  1.00146.13           O
HETATM 6356  O5  NAG E 715     -14.285  65.206 130.280  1.00127.67           O
HETATM 6357  O6  NAG E 715     -16.119  64.223 132.547  1.00146.11           O
HETATM 6358  O7  NAG E 715     -12.822  69.803 130.991  1.00107.45           O
HETATM 6359  C1  NAG E 716     -14.007  64.457 134.873  1.00153.38           C
HETATM 6360  C2  NAG E 716     -13.371  63.602 135.988  1.00156.41           C
HETATM 6361  C3  NAG E 716     -14.210  63.690 137.263  1.00160.61           C
HETATM 6362  C4  NAG E 716     -14.435  65.147 137.669  1.00163.56           C
HETATM 6363  C5  NAG E 716     -15.038  65.907 136.472  1.00158.89           C
HETATM 6364  C6  NAG E 716     -15.260  67.379 136.718  1.00156.19           C
HETATM 6365  C7  NAG E 716     -12.189  61.768 134.965  1.00152.83           C
HETATM 6366  C8  NAG E 716     -12.169  60.299 134.580  1.00150.30           C
HETATM 6367  N2  NAG E 716     -13.278  62.212 135.582  1.00154.14           N
HETATM 6368  O3  NAG E 716     -13.568  62.989 138.314  1.00162.37           O
HETATM 6369  O4  NAG E 716     -15.317  65.213 138.816  1.00173.10           O
HETATM 6370  O5  NAG E 716     -14.168  65.807 135.320  1.00155.54           O
HETATM 6371  O6  NAG E 716     -16.102  67.940 135.721  1.00150.07           O
HETATM 6372  O7  NAG E 716     -11.235  62.491 134.683  1.00152.15           O
HETATM 6373  C1  MAN E 717     -14.704  65.389 140.058  1.00179.54           C
HETATM 6374  C2  MAN E 717     -15.550  66.323 140.967  1.00179.64           C
HETATM 6375  C3  MAN E 717     -14.922  66.431 142.375  1.00179.99           C
HETATM 6376  C4  MAN E 717     -14.602  65.041 142.953  1.00181.96           C
HETATM 6377  C5  MAN E 717     -13.811  64.185 141.935  1.00181.15           C
HETATM 6378  C6  MAN E 717     -13.514  62.757 142.404  1.00176.91           C
HETATM 6379  O2  MAN E 717     -16.895  65.853 141.057  1.00178.44           O
HETATM 6380  O3  MAN E 717     -15.793  67.148 143.255  1.00174.10           O
HETATM 6381  O4  MAN E 717     -13.845  65.195 144.149  1.00184.08           O
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HETATM 6382  O5  MAN E 717     -14.530  64.100 140.676  1.00182.95           O
HETATM 6383  O6  MAN E 717     -13.076  61.944 141.331  1.00170.00           O
HETATM 6384  C1  NAG F 639      32.119  83.029  85.947  1.00126.87           C
HETATM 6385  C2  NAG F 639      31.123  83.873  85.146  1.00132.58           C
HETATM 6386  C3  NAG F 639      31.850  85.065  84.522  1.00142.72           C
HETATM 6387  C4  NAG F 639      32.640  85.843  85.573  1.00144.73           C
HETATM 6388  C5  NAG F 639      33.477  84.929  86.479  1.00141.68           C
HETATM 6389  C6  NAG F 639      33.956  85.709  87.677  1.00145.51           C
HETATM 6390  C7  NAG F 639      29.211  83.100  83.912  1.00114.73           C
HETATM 6391  C8  NAG F 639      28.655  82.251  82.789  1.00113.10           C
HETATM 6392  N2  NAG F 639      30.525  83.075  84.096  1.00122.92           N
HETATM 6393  O3  NAG F 639      30.894  85.933  83.937  1.00153.03           O
HETATM 6394  O4  NAG F 639      33.530  86.765  84.919  1.00152.34           O
HETATM 6395  O5  NAG F 639      32.688  83.834  86.990  1.00133.39           O
HETATM 6396  O6  NAG F 639      33.072  86.838  87.906  1.00154.44           O
HETATM 6397  O7  NAG F 639      28.449  83.760  84.617  1.00103.75           O
HETATM 6398  C1  NAG F 640      33.137  88.089  84.918  1.00160.26           C
HETATM 6399  C2  NAG F 640      34.360  88.991  84.918  1.00165.79           C
HETATM 6400  C3  NAG F 640      33.874  90.433  84.975  1.00166.89           C
HETATM 6401  C4  NAG F 640      32.916  90.720  83.827  1.00166.57           C
HETATM 6402  C5  NAG F 640      31.829  89.650  83.659  1.00162.73           C
HETATM 6403  C6  NAG F 640      31.206  89.777  82.285  1.00163.21           C
HETATM 6404  C7  NAG F 640      36.509  88.517  85.907  1.00168.89           C
HETATM 6405  C8  NAG F 640      37.313  88.220  87.164  1.00167.41           C
HETATM 6406  N2  NAG F 640      35.201  88.697  86.063  1.00169.98           N
HETATM 6407  O3  NAG F 640      34.979  91.324  84.909  1.00166.81           O
HETATM 6408  O4  NAG F 640      32.271  91.975  84.072  1.00172.21           O
HETATM 6409  O5  NAG F 640      32.379  88.320  83.730  1.00159.82           O
HETATM 6410  O6  NAG F 640      32.210  89.775  81.279  1.00163.84           O
HETATM 6411  O7  NAG F 640      37.070  88.569  84.812  1.00166.29           O
HETATM 6412  C1  MAN F 641      32.546  92.988  83.167  1.00180.23           C
HETATM 6413  C2  MAN F 641      31.336  93.932  83.144  1.00181.77           C
HETATM 6414  C3  MAN F 641      31.609  95.378  82.683  1.00183.44           C
HETATM 6415  C4  MAN F 641      33.058  95.856  82.878  1.00185.67           C
HETATM 6416  C5  MAN F 641      34.077  94.730  82.765  1.00188.14           C
HETATM 6417  C6  MAN F 641      35.503  95.137  83.126  1.00190.39           C
HETATM 6418  O2  MAN F 641      30.757  93.965  84.446  1.00182.75           O
HETATM 6419  O3  MAN F 641      30.773  96.214  83.495  1.00186.38           O
HETATM 6420  O4  MAN F 641      33.357  96.858  81.921  1.00182.05           O
HETATM 6421  O5  MAN F 641      33.703  93.676  83.648  1.00185.32           O
HETATM 6422  O6  MAN F 641      36.496  94.413  82.345  1.00194.64           O
HETATM 6423  C1  MAN F 642      29.936  97.176  82.914  1.00189.51           C
HETATM 6424  C2  MAN F 642      30.777  98.175  82.097  1.00190.77           C
HETATM 6425  C3  MAN F 642      31.732  98.953  83.014  1.00193.36           C
HETATM 6426  C4  MAN F 642      31.007  99.548  84.231  1.00196.45           C
HETATM 6427  C5  MAN F 642      30.138  98.480  84.910  1.00197.04           C
HETATM 6428  C6  MAN F 642      29.298  98.985  86.072  1.00198.31           C
HETATM 6429  O2  MAN F 642      29.917  99.076  81.421  1.00189.27           O
HETATM 6430  O3  MAN F 642      32.344  99.994  82.278  1.00193.29           O
HETATM 6431  O4  MAN F 642      31.959 100.047  85.159  1.00198.31           O
HETATM 6432  O5  MAN F 642      29.244  97.892  83.935  1.00193.89           O
HETATM 6433  O6  MAN F 642      29.306 100.403  86.145  1.00198.31           O
HETATM 6434  C1  MAN F 643      35.990  93.378  81.534  1.00198.31           C
HETATM 6435  C2  MAN F 643      36.782  92.081  81.772  1.00198.31           C
HETATM 6436  C3  MAN F 643      38.190  92.201  81.187  1.00198.31           C
HETATM 6437  C4  MAN F 643      38.117  92.592  79.710  1.00197.82           C
HETATM 6438  C5  MAN F 643      37.307  93.883  79.557  1.00196.82           C
HETATM 6439  C6  MAN F 643      37.111  94.291  78.111  1.00194.00           C
HETATM 6440  O2  MAN F 643      36.100  90.996  81.162  1.00198.31           O
HETATM 6441  O3  MAN F 643      38.872  90.965  81.327  1.00196.63           O
HETATM 6442  O4  MAN F 643      39.427  92.789  79.206  1.00194.91           O
HETATM 6443  O5  MAN F 643      35.992  93.719  80.139  1.00198.31           O
HETATM 6444  O6  MAN F 643      35.953  93.686  77.550  1.00188.74           O
HETATM 6445  C1  FUC F 644      32.433  86.921  89.162  1.00159.25           C
HETATM 6446  C2  FUC F 644      33.063  85.961  90.188  1.00160.27           C
HETATM 6447  C3  FUC F 644      34.526  86.346  90.381  1.00161.26           C
HETATM 6448  C4  FUC F 644      34.602  87.805  90.850  1.00162.65           C
HETATM 6449  C5  FUC F 644      33.873  88.703  89.841  1.00161.15           C
HETATM 6450  C6  FUC F 644      33.817  90.159  90.238  1.00159.96           C
HETATM 6451  O2  FUC F 644      32.956  84.618  89.743  1.00160.19           O
HETATM 6452  O3  FUC F 644      35.136  85.487  91.330  1.00161.08           O
HETATM 6453  O4  FUC F 644      33.975  87.913  92.120  1.00166.93           O
HETATM 6454  O5  FUC F 644      32.513  88.244  89.671  1.00159.60           O
HETATM 6455  C1  NAG G 692      27.367  69.699  61.043  1.00 81.28           C
HETATM 6456  C2  NAG G 692      27.349  68.145  60.977  1.00 89.99           C
HETATM 6457  C3  NAG G 692      26.829  67.603  59.625  1.00 91.14           C
HETATM 6458  C4  NAG G 692      25.533  68.296  59.204  1.00 89.04           C
HETATM 6459  C5  NAG G 692      25.833  69.796  59.186  1.00 83.33           C
HETATM 6460  C6  NAG G 692      24.698  70.656  58.666  1.00 86.45           C
HETATM 6461  C7  NAG G 692      29.018  67.014  62.319  1.00101.90           C
HETATM 6462  C8  NAG G 692      30.453  66.530  62.450  1.00102.83           C
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HETATM 6463  N2  NAG G 692      28.695  67.645  61.192  1.00 97.33           N
HETATM 6464  O3  NAG G 692      26.613  66.201  59.704  1.00 94.88           O
HETATM 6465  O4  NAG G 692      25.126  67.837  57.887  1.00 95.09           O
HETATM 6466  O5  NAG G 692      26.146  70.251  60.521  1.00 73.85           O
HETATM 6467  O6  NAG G 692      23.430  70.092  58.975  1.00 86.10           O
HETATM 6468  O7  NAG G 692      28.219  66.809  63.233  1.00101.45           O
HETATM 6469  C1  NAG G 693      23.871  67.233  57.756  1.00 98.64           C
HETATM 6470  C2  NAG G 693      23.321  67.464  56.335  1.00 95.54           C
HETATM 6471  C3  NAG G 693      21.965  66.769  56.169  1.00 98.16           C
HETATM 6472  C4  NAG G 693      22.030  65.297  56.580  1.00105.51           C
HETATM 6473  C5  NAG G 693      22.757  65.103  57.934  1.00108.87           C
HETATM 6474  C6  NAG G 693      23.069  63.640  58.214  1.00113.67           C
HETATM 6475  C7  NAG G 693      24.226  69.586  55.632  1.00 93.26           C
HETATM 6476  C8  NAG G 693      24.005  71.065  55.377  1.00 87.73           C
HETATM 6477  N2  NAG G 693      23.183  68.884  56.070  1.00 91.40           N
HETATM 6478  O3  NAG G 693      21.548  66.851  54.818  1.00 87.79           O
HETATM 6479  O4  NAG G 693      20.685  64.776  56.677  1.00114.16           O
HETATM 6480  O5  NAG G 693      24.024  65.819  57.970  1.00102.56           O
HETATM 6481  O6  NAG G 693      22.449  62.779  57.263  1.00119.18           O
HETATM 6482  O7  NAG G 693      25.340  69.094  55.434  1.00101.16           O
HETATM 6483  C1  MAN G 694      20.286  63.958  55.639  1.00119.37           C
HETATM 6484  C2  MAN G 694      19.098  63.069  56.066  1.00121.55           C
HETATM 6485  C3  MAN G 694      18.780  62.208  54.854  1.00123.62           C
HETATM 6486  C4  MAN G 694      18.409  63.081  53.662  1.00129.09           C
HETATM 6487  C5  MAN G 694      19.574  64.023  53.357  1.00130.74           C
HETATM 6488  C6  MAN G 694      19.188  64.996  52.274  1.00141.14           C
HETATM 6489  O2  MAN G 694      17.976  63.876  56.409  1.00125.53           O
HETATM 6490  O3  MAN G 694      17.763  61.211  55.108  1.00113.48           O
HETATM 6491  O4  MAN G 694      18.152  62.263  52.530  1.00136.46           O
HETATM 6492  O5  MAN G 694      19.915  64.791  54.532  1.00121.09           O
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HETATM 6494  C1  MAN G 695      17.828  60.147  54.190  1.00113.74           C
HETATM 6495  C2  MAN G 695      17.347  58.835  54.818  1.00111.77           C
HETATM 6496  C3  MAN G 695      18.355  58.337  55.863  1.00115.55           C
HETATM 6497  C4  MAN G 695      19.766  58.266  55.265  1.00117.80           C
HETATM 6498  C5  MAN G 695      20.118  59.626  54.673  1.00117.97           C
HETATM 6499  C6  MAN G 695      21.498  59.749  54.057  1.00117.01           C
HETATM 6500  O2  MAN G 695      17.217  57.856  53.796  1.00 96.60           O
HETATM 6501  O3  MAN G 695      17.970  57.052  56.331  1.00120.40           O
HETATM 6502  O4  MAN G 695      20.700  57.925  56.277  1.00120.93           O
HETATM 6503  O5  MAN G 695      19.144  59.971  53.668  1.00117.19           O
HETATM 6504  O6  MAN G 695      21.834  58.594  53.308  1.00113.39           O
HETATM 6505  C1  MAN G 696      19.885  66.898  51.143  1.00164.32           C
HETATM 6506  C2  MAN G 696      21.062  67.519  50.365  1.00166.62           C
HETATM 6507  C3  MAN G 696      22.001  68.326  51.285  1.00171.12           C
HETATM 6508  C4  MAN G 696      21.233  69.232  52.282  1.00175.18           C
HETATM 6509  C5  MAN G 696      20.073  68.476  52.948  1.00173.34           C
HETATM 6510  C6  MAN G 696      19.196  69.358  53.827  1.00172.72           C
HETATM 6511  O2  MAN G 696      20.585  68.356  49.314  1.00163.60           O
HETATM 6512  O3  MAN G 696      22.877  69.128  50.491  1.00169.59           O
HETATM 6513  O4  MAN G 696      22.124  69.702  53.294  1.00179.94           O
HETATM 6514  O5  MAN G 696      19.229  67.884  51.939  1.00170.02           O
HETATM 6515  O6  MAN G 696      19.108  70.684  53.320  1.00172.71           O
HETATM 6516  C1  NAG H 715      13.640  83.037  66.153  1.00115.84           C
HETATM 6517  C2  NAG H 715      12.944  84.348  65.800  1.00117.74           C
HETATM 6518  C3  NAG H 715      12.827  84.533  64.279  1.00130.57           C
HETATM 6519  C4  NAG H 715      14.059  84.079  63.468  1.00140.47           C
HETATM 6520  C5  NAG H 715      14.747  82.839  64.066  1.00137.92           C
HETATM 6521  C6  NAG H 715      16.121  82.604  63.466  1.00140.32           C
HETATM 6522  C7  NAG H 715      11.226  85.294  67.210  1.00 95.61           C
HETATM 6523  C8  NAG H 715       9.809  85.192  67.743  1.00 87.49           C
HETATM 6524  N2  NAG H 715      11.611  84.340  66.371  1.00105.35           N
HETATM 6525  O3  NAG H 715      12.579  85.904  63.987  1.00126.41           O
HETATM 6526  O4  NAG H 715      13.614  83.755  62.132  1.00155.63           O
HETATM 6527  O5  NAG H 715      14.904  82.978  65.491  1.00126.15           O
HETATM 6528  O6  NAG H 715      17.064  82.210  64.447  1.00143.48           O
HETATM 6529  O7  NAG H 715      11.952  86.224  67.555  1.00 91.56           O
HETATM 6530  C1  NAG H 716      14.154  84.450  61.069  1.00170.24           C
HETATM 6531  C2  NAG H 716      14.427  83.462  59.946  1.00178.62           C
HETATM 6532  C3  NAG H 716      14.948  84.201  58.720  1.00182.32           C
HETATM 6533  C4  NAG H 716      13.979  85.302  58.305  1.00182.82           C
HETATM 6534  C5  NAG H 716      13.630  86.201  59.513  1.00181.47           C
HETATM 6535  C6  NAG H 716      12.531  87.178  59.199  1.00185.71           C
HETATM 6536  C7  NAG H 716      15.013  81.194  60.478  1.00183.72           C
HETATM 6537  C8  NAG H 716      16.059  80.205  60.959  1.00184.71           C
HETATM 6538  N2  NAG H 716      15.382  82.468  60.395  1.00181.87           N
HETATM 6539  O3  NAG H 716      15.138  83.291  57.652  1.00185.53           O
HETATM 6540  O4  NAG H 716      14.571  86.094  57.256  1.00183.84           O
HETATM 6541  O5  NAG H 716      13.181  85.413  60.646  1.00172.88           O
HETATM 6542  O6  NAG H 716      12.397  88.161  60.216  1.00192.77           O
HETATM 6543  O7  NAG H 716      13.881  80.804  60.195  1.00183.38           O
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HETATM	6544	C1	MAN	H	717	13.820	86.274	56.101	1.00	184.69	C
HETATM	6545	C2	MAN	H	717	13.250	87.719	56.059	1.00	183.61	C
HETATM	6546	C3	MAN	H	717	12.670	88.105	54.679	1.00	185.94	C
HETATM	6547	C4	MAN	H	717	13.602	87.681	53.533	1.00	190.00	C
HETATM	6548	C5	MAN	H	717	14.036	86.209	53.703	1.00	191.21	C
HETATM	6549	C6	MAN	H	717	14.958	85.664	52.604	1.00	190.18	C
HETATM	6550	O2	MAN	H	717	14.249	88.653	56.450	1.00	178.99	O
HETATM	6551	O3	MAN	H	717	12.417	89.514	54.633	1.00	181.42	O
HETATM	6552	O4	MAN	H	717	12.959	87.878	52.278	1.00	190.59	O
HETATM	6553	O5	MAN	H	717	14.701	86.037	54.987	1.00	188.51	O
HETATM	6554	O6	MAN	H	717	14.994	84.241	52.603	1.00	188.39	O

GALACTOSE MOLECULE COORDINATES

		Atom Type	Resid	#	X	Y	Z	OCC	B	
HETATM	6555	C1	GAL	1101	-17.781	61.062	105.414	1.00	61.45	C
HETATM	6556	C2	GAL	1101	-16.853	59.968	105.952	1.00	59.70	C
HETATM	6557	C3	GAL	1101	-16.406	59.043	104.831	1.00	57.27	C
HETATM	6558	C4	GAL	1101	-17.672	58.457	104.235	1.00	55.95	C
HETATM	6559	C5	GAL	1101	-18.524	59.590	103.680	1.00	62.81	C
HETATM	6560	C6	GAL	1101	-19.797	59.114	103.010	1.00	66.98	C
HETATM	6561	O1	GAL	1101	-17.082	61.854	104.525	1.00	60.34	O
HETATM	6562	O2	GAL	1101	-15.728	60.529	106.610	1.00	61.68	O
HETATM	6563	O3	GAL	1101	-15.549	58.009	105.328	1.00	56.11	O
HETATM	6564	O4	GAL	1101	-18.379	57.776	105.258	1.00	47.84	O
HETATM	6565	O5	GAL	1101	-18.909	60.485	104.733	1.00	64.69	O
HETATM	6566	O6	GAL	1101	-20.698	60.192	102.791	1.00	69.17	O
HETATM	6567	C1	GAL	1103	19.728	69.733	87.085	1.00	73.14	C
HETATM	6568	C2	GAL	1103	19.032	68.891	86.002	1.00	74.89	C
HETATM	6569	C3	GAL	1103	18.997	67.401	86.351	1.00	73.18	C
HETATM	6570	C4	GAL	1103	20.418	66.932	86.650	1.00	67.98	C
HETATM	6571	C5	GAL	1103	21.069	67.816	87.740	1.00	70.88	C
HETATM	6572	C6	GAL	1103	22.533	67.422	87.991	1.00	68.59	C
HETATM	6573	O1	GAL	1103	18.964	69.722	88.243	1.00	64.62	O
HETATM	6574	O2	GAL	1103	17.708	69.354	85.806	1.00	82.04	O
HETATM	6575	O3	GAL	1103	18.444	66.627	85.276	1.00	75.70	O
HETATM	6576	O4	GAL	1103	21.194	66.934	85.456	1.00	55.41	O
HETATM	6577	O5	GAL	1103	21.051	69.220	87.364	1.00	77.47	O
HETATM	6578	O6	GAL	1103	23.045	67.950	89.214	1.00	61.30	O

ETHYLENE GLYCOL MOLECULE COORDINATES

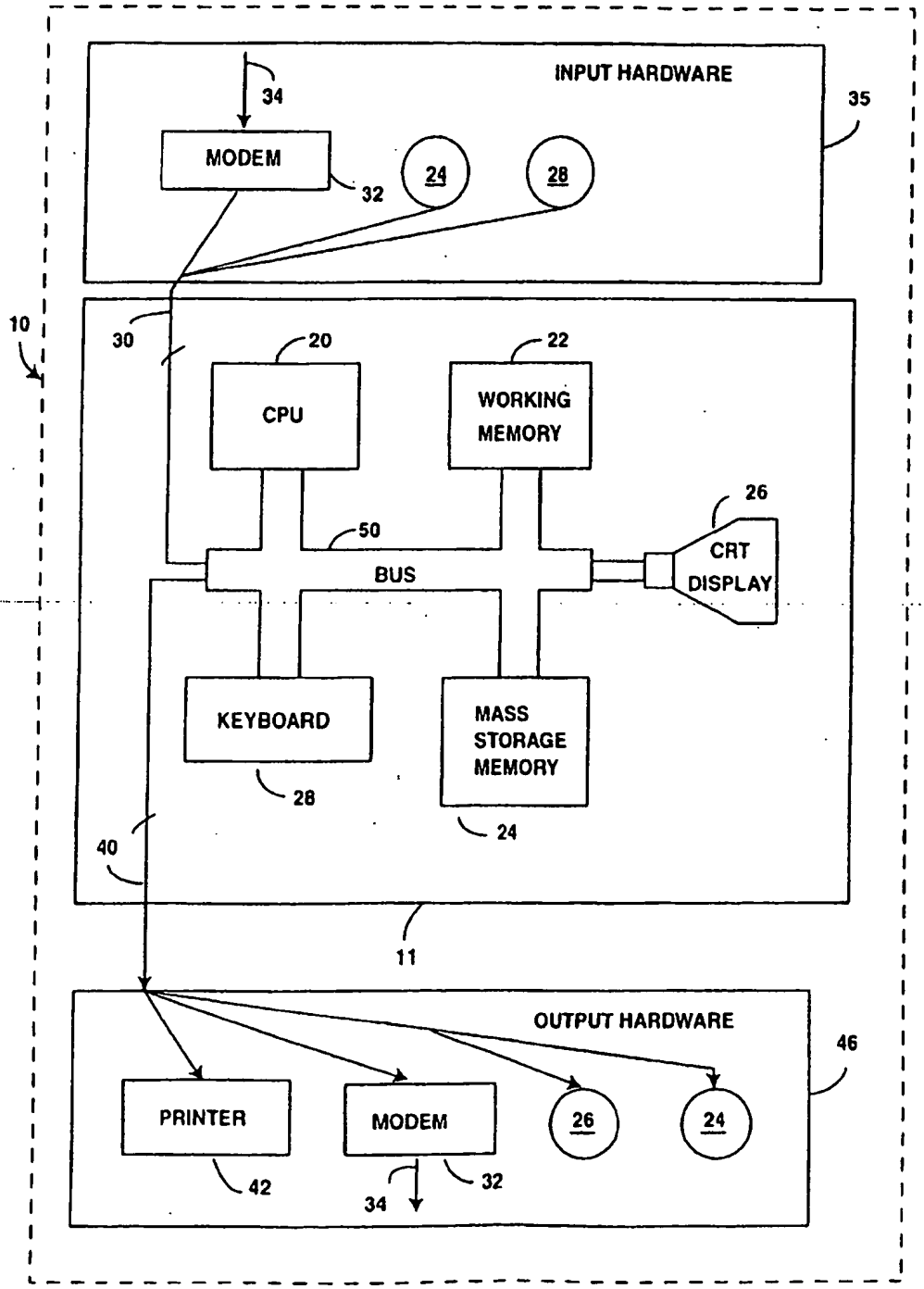
		Atom Type	Resid	#	X	Y	Z	OCC	B	
HETATM	6579	C1	EGL	1102	21.911	35.815	115.706	1.00	104.60	C
HETATM	6580	O1	EGL	1102	21.022	34.746	116.032	1.00	102.85	O
HETATM	6581	C2	EGL	1102	21.852	36.116	114.185	1.00	103.58	C
HETATM	6582	O2	EGL	1102	20.925	35.242	113.531	1.00	95.95	O
HETATM	6583	C1	EGL	1104	19.899	39.439	90.310	1.00	108.69	C
HETATM	6584	O1	EGL	1104	20.931	40.421	90.338	1.00	105.85	O
HETATM	6585	C2	EGL	1104	19.324	39.275	91.722	1.00	106.50	C
HETATM	6586	O2	EGL	1104	20.002	40.157	92.629	1.00	103.98	O

WATER MOLECULE COORDINATES

		Atom Type	Resid	#	X	Y	Z	OCC	B	
HETATM	6587	O	HOH	1	4.389	62.036	109.896	1.00	36.21	O
HETATM	6588	O	HOH	2	-33.743	66.424	98.001	1.00	49.95	O
HETATM	6589	O	HOH	3	-31.308	61.068	97.174	1.00	14.32	O
HETATM	6590	O	HOH	4	7.246	39.358	106.515	1.00	49.50	O
HETATM	6591	O	HOH	5	-4.342	56.381	115.242	1.00	82.65	O
HETATM	6592	O	HOH	6	-5.596	72.666	75.302	1.00	22.68	O
HETATM	6593	O	HOH	7	7.443	68.845	89.368	1.00	49.14	O
HETATM	6594	O	HOH	8	-34.391	44.412	107.214	1.00	32.63	O
HETATM	6595	O	HOH	9	-12.650	42.533	120.345	1.00	32.46	O
HETATM	6596	O	HOH	10	-2.388	67.495	82.217	1.00	35.71	O
HETATM	6597	O	HOH	11	36.062	56.527	97.931	1.00	36.76	O
HETATM	6598	O	HOH	12	15.246	49.180	67.281	1.00	35.06	O
HETATM	6599	O	HOH	13	16.887	52.495	68.847	1.00	54.15	O
HETATM	6600	O	HOH	14	8.892	64.968	116.907	1.00	83.42	O
HETATM	6601	O	HOH	15	-6.111	64.210	102.918	1.00	3.31	O
HETATM	6602	O	HOH	16	-4.402	69.993	67.725	1.00	37.68	O
HETATM	6603	O	HOH	17	5.852	79.004	83.860	1.00	56.31	O
HETATM	6604	O	HOH	18	32.211	64.353	90.834	1.00	70.31	O

ATTORNEY DOCKET NUMBER: 0402
Express Mail Label No.: EU604545486US
Date of Deposit: January 13, 2004

FIGURE 2



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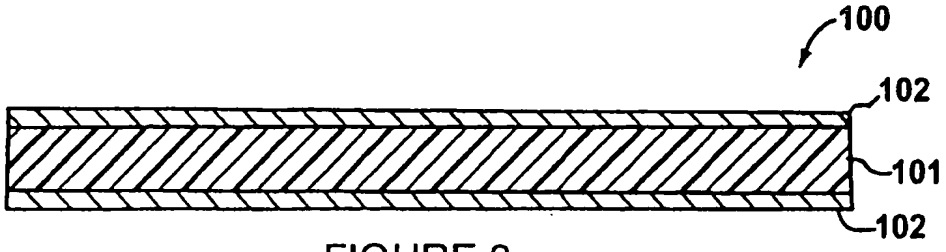


FIGURE 3

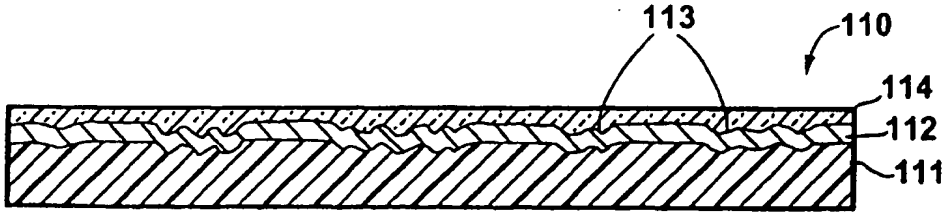
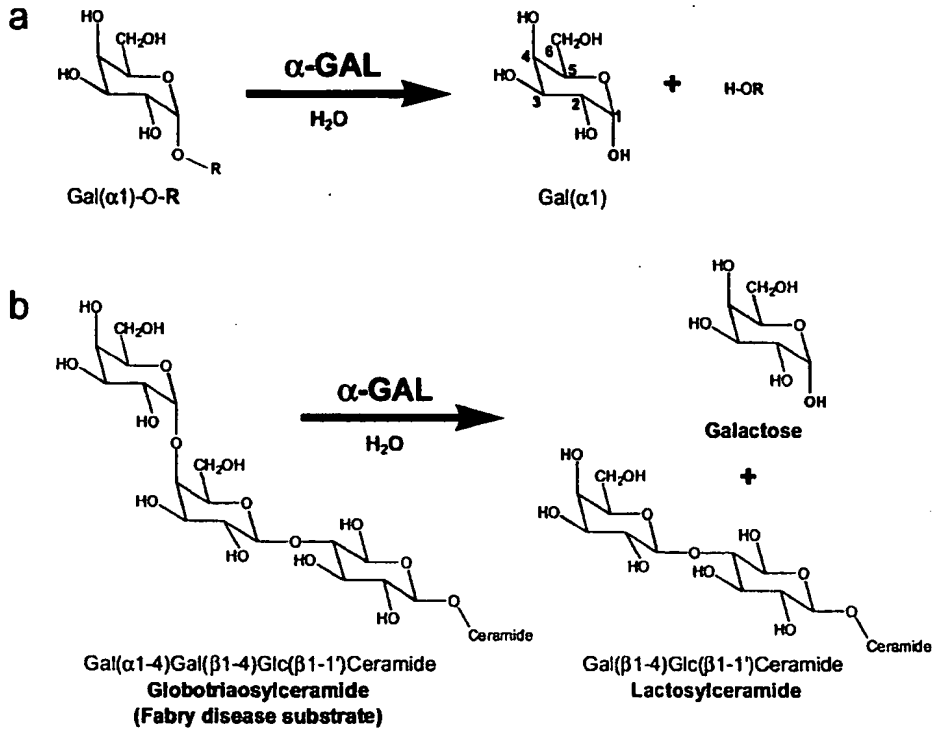


FIGURE 4

FIGURE 5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H2O
H-OR
Gal(α1)-O-R
Gal(α1)
b
α-GAL
H2O
Galactose
Ceramide
Ceramide
Gal(α1-4)Gal(β1-4)Glc(β1-1')Ceramide
Globotriaosylceramide
(Fabry disease substrate)
Gal(β1-4)Glc(β1-1')Ceramide
Lactosylceramide

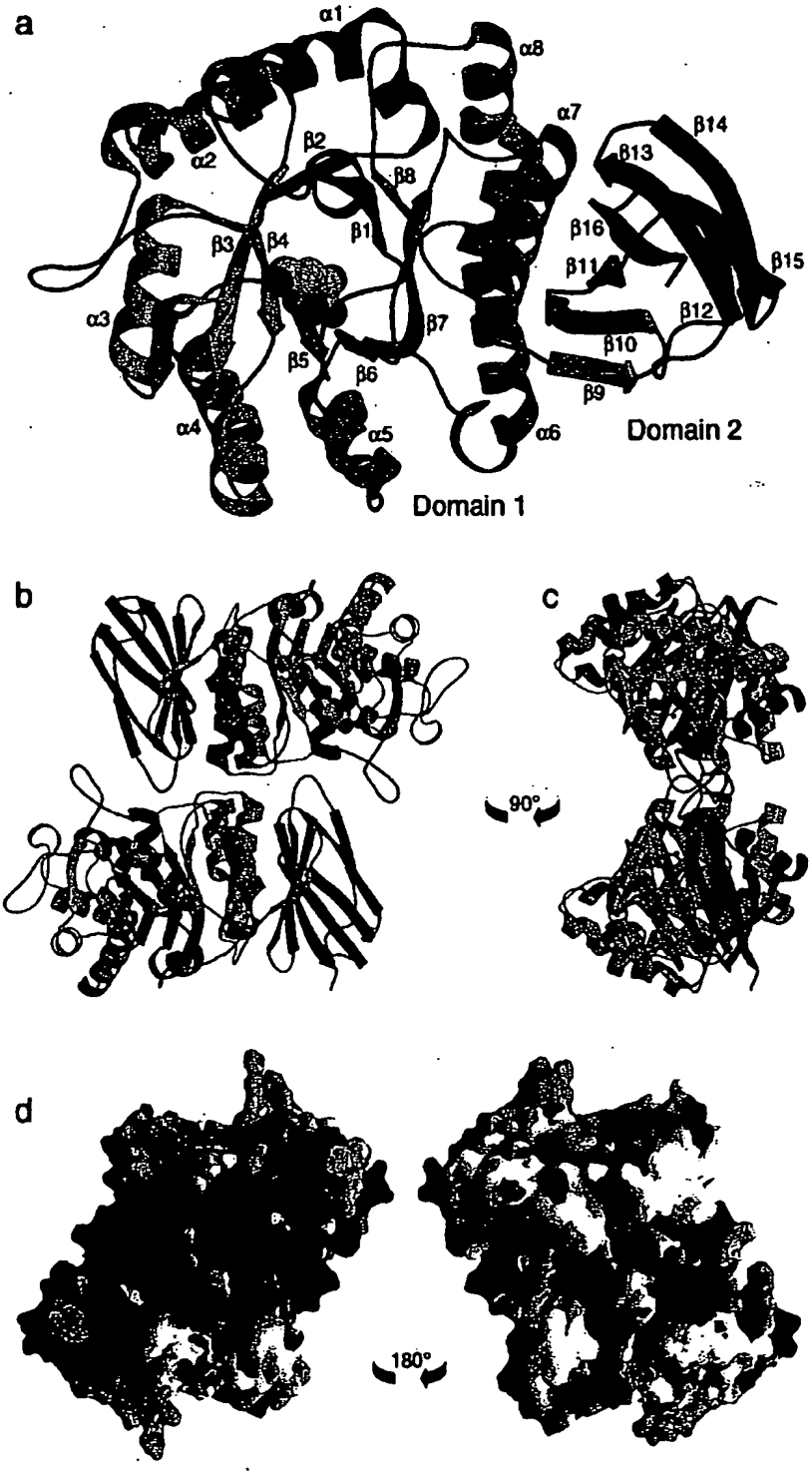
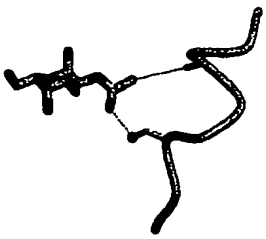


FIGURE 6



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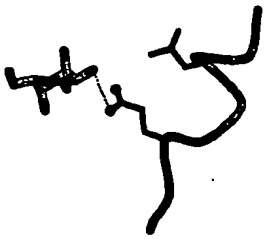

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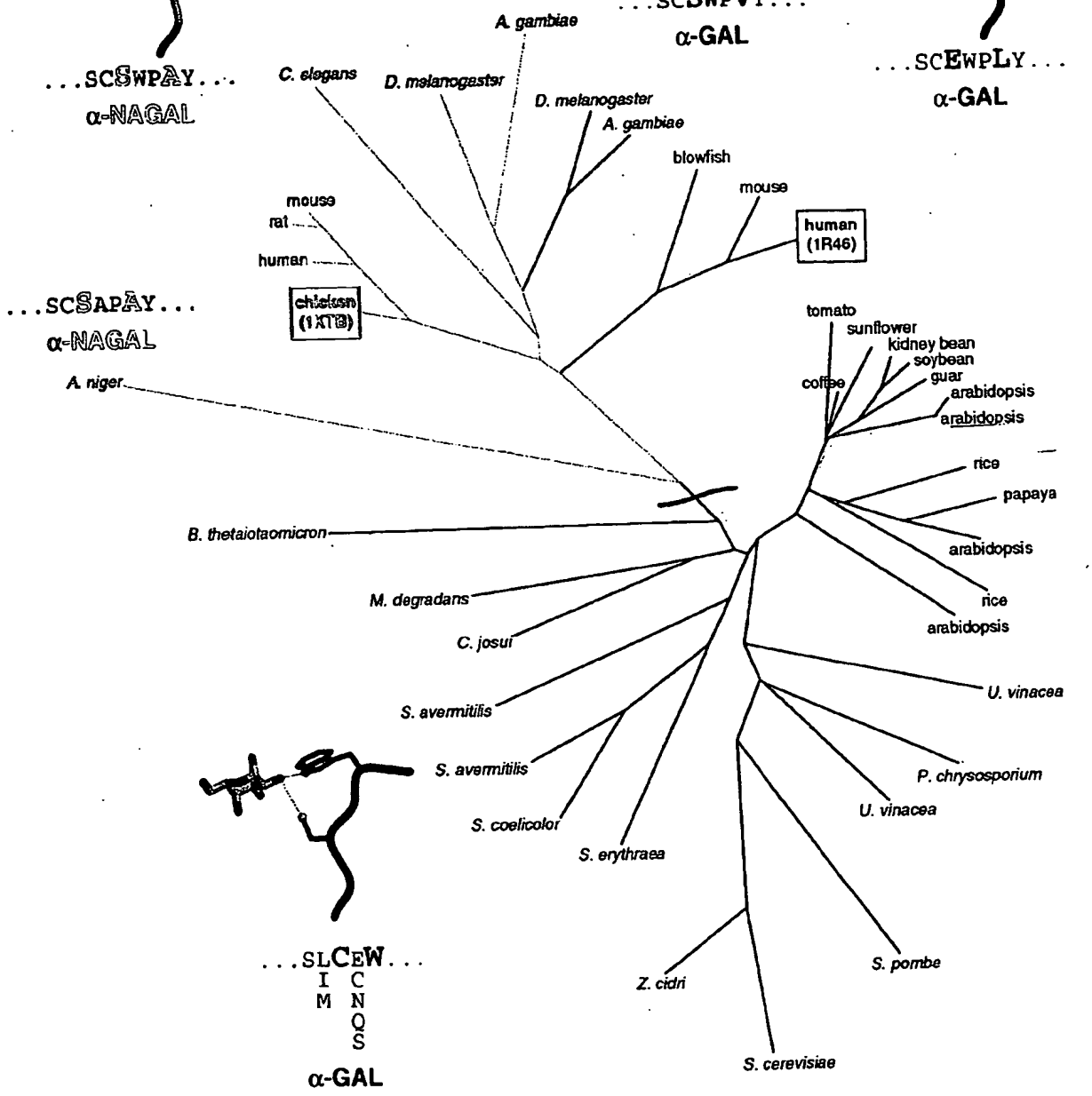

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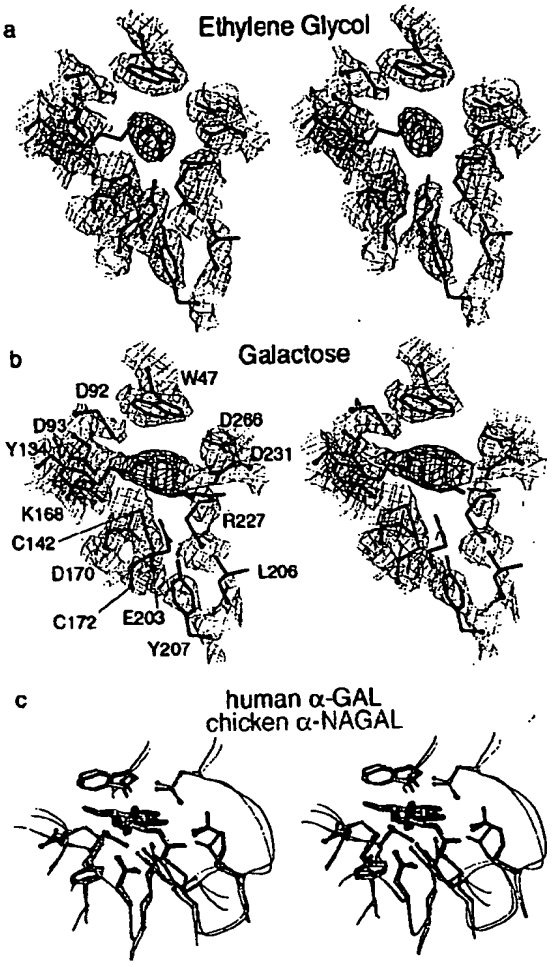
...SLCEW...
I C
M N
Q
S
α-GAL

FIGURE 7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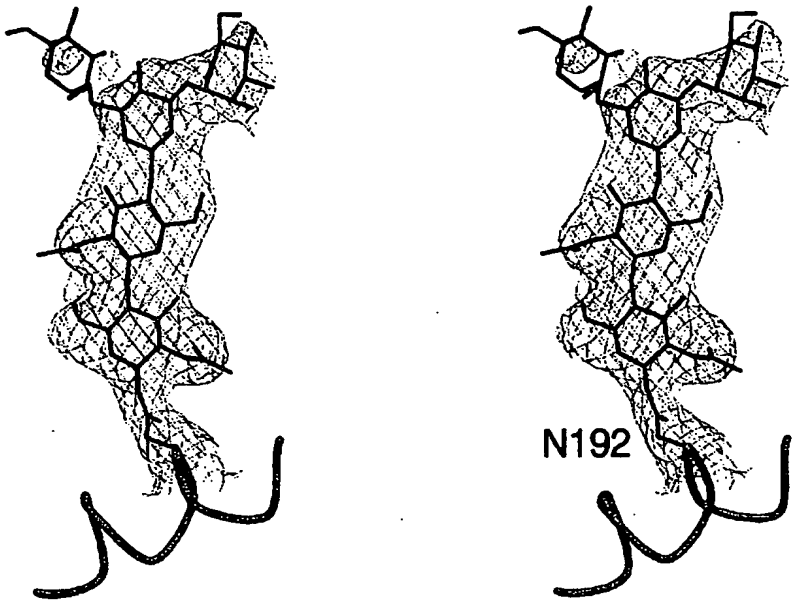
c
human α-GAL
chicken α-NAGAL

FIGURE 8.

FIGURE 9



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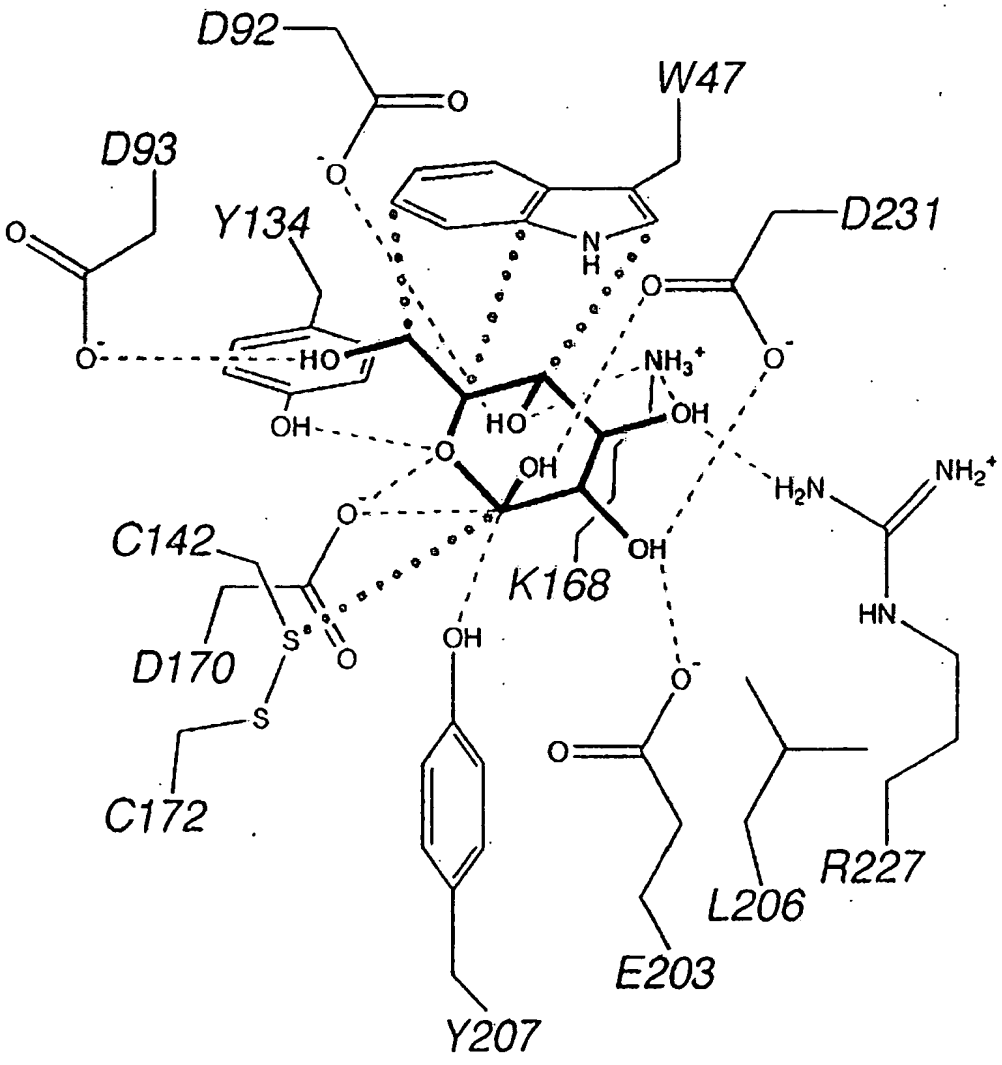
Date of Deposit: January 13, 2004

FIGURE 10



APPLICATION DATA SHEET FORM

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Title Line One::	CRYSTAL STRUCTURE OF HUMAN α-GALACTOSIDASE
Total Specification Sheets w/Claims::	39
Total Drawing Sheets::	91
Sequence Listing Sheets::	3
Claims::	8
Application Type::	Provisional
Docket Number::	0402
Date of deposit::	January 13, 2004
Express Mail No.::	EU604545486US

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Representative Customer Number

Continuity Information

Prior Foreign Applications

Foreign Application One::
Filing Date::
Country::
Priority Claimed::

SEQUENCE LISTING

<110> National Institute of Allergy and Infectious Diseases, NIH
Transkaryotic Therapies, Inc.
Garman, Scott C.
Garboczi, David N.
Selden, Richard F.
Treco, Douglas A.
Heartlein, Michael W.
Borowski, Marianne

<120> CRYSTAL STRUCTURE OF HUMAN ALPHA-GALACTOSIDASE

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Thr Gln Leu Leu Pro Val Lys Arg Lys Leu Gly Phe Tyr Glu Trp Thr
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